PART XVI

A REVISION OF ONCINOTIS BENTH. (APOCYNACEAE)

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INTRODUCTION

This publication is a monographic revision of the genus Oncinotis containing seven species, six of which are restricted to continental Africa and one to Madagascar. The study is based mainly on herbarium material. In addition the author has had the opportunity to study living plants of five species in the wild and under cultivation in botanical gardens in Africa.

HISTORY OF THE GENUS

When BENTHAM (1849) described the genus *Oncinotis* he based it on a single species, *O. nitida*. The name *Oncinotis* is derived from the Latin 'uncus' (in Greek '*ὄνκος*'), 'uncinatus' meaning 'shaped like a hook, hooked', referring to the curved tails of the anthers.

Several authors added further species, some of which were later reduced to synonomy, while others have been referred to the closely related genus *Baissea*. Meanwhile a few species were erroneously described in the closely related genus *Motandra*.

In 1954 PICHON revised *Oncinotis* and attributed 10 species to it, 7 of which are maintained here.

GEOGRAPHICAL DISTRIBUTION

The distribution of the genus is shown on Map A. *Oncinotis tenuiloba* is the most widely distributed species reaching from Western Nigeria to Eastern South Africa, *O. glabrata, O. gracilis* and *O. pontyi* occur in West and Central Africa. Less widely distributed species are: *O. nitida,* limited to a comparitively narrow zone along the West African coast; *O. hirta,* restricted to Central Africa; and *O. tomentella,* endemic in Madagascar.

HABIT AND GROWTH

All *Oncinotis* species are lianas or climbing shrubs. The present author has observed the architectural model of TROLL (HALLÉ & OLDEMAN 1970: 125; HALLÉ et al 1978: 242) in the field for five species (*O. glabrata, O. gracilis, O. nitida, O. pontyi* and *O. tenuiloba*). The species wind either to the right or to the left, or are not twining.

FLOWERING SEASONS

Oncinotis species flower towards the end of the dry and the beginning of the rainy seasons, and fruits mature in the dry seasons.

RELATIONSHIP TO OTHER GENERA

Oncinotis is closely allied to *Baissea* and *Motandra*. These 3 genera constitute the subtribe *Baisseinae* of the tribe *Ichnocarpeae*. The author will return to this subject in his forthcoming revision of *Baissea*.

GENUS DIAGNOSIS

Oncinotis Benth. 1849: 451–452; Bentham & Hooker 1876: 718; Baillon 1889: 210; Schumann 1895a: 179; Stapf 1902: 220–224; Stapf 1907b: 512; Pichon 1948a: 196–197; 1950: 113–114; Phillips 1951: 588; Pichon 1954: 9–36; Codd 1963: 288; Dyer 1975: 468; Markgraf 1976: 222–223. **Fig. A; Map A**

Type species: *O. nitida* Benth. Homotypic synonym: *O.* sect. *Afrotis* Pichon 1948: 196.

Heterotypic synonym: *O.* sect. *Malgotis* Pichon 1948: 197. Type species: *O. tomentella* Radlk.

Climbing *shrubs* or *lianas*; white latex present. *Branches* unarmed. Branchlets opposite or subopposite, terete. Stipules none. *Leaves* opposite or subopposite, those of a pair equal, without colleters in the axils; petiole often rounded beneath and channeled above when dry, otherwise terete, glandular along the adaxial side; blade ovate to obovate or narrowly so, usually acuminate, sometimes emarginate (or exceptionally rounded) at the apex, cuneate or rounded at the base, entire, sometimes undulate or recurved at the margin; midrib impressed above and prominent beneath; on each side 2–25 conspicuous secondary veins, which are curved towards the margin, anastomosing, impressed above and prominent beneath; often in the axils of some secondary veins domatia consisting of pits, often with a ciliate margin, or of a tuft of hairs; tertiary venation sometimes conspicuous, reticulate or scalariform. *Inflorescences* terminal or axillary, thyrsoid, rather lax, many-flowered. Bracts, and – if present – bracteoles, deciduous, inside glabrous, ciliate. Flowers 5-merous, fragrant, actinomorphic or with only unequal sepals. *Sepals* imbricate, connate up to 1 mm at the base, subacute to obtuse at the apex, entire outside pubescent or with a dense tomentum, inside glabrous or only sparsely pubescent near the apex and margin, ciliate, exceptionally inside at the base 0–3 colleters per sepal, situated at the margin. *Corolla*: tube outside shortly pubescent, exept the portion, covered by the sepals, inside glabrous, except for tufts of stiff hairs, alternating with the stamens; at the mouth of the corolla tube with 5 alternipetalous corona scales; lobes in bud contorted and overlapping to the right, obtuse to subacute at the apex, recurved, entire, glabrous inside, slightly ciliate. *Stamens* included, connivent into a cone; filaments abaxially glabrous, adaxially pubescent; anthers introrse, fusiform, basifixed, acuminate, sagittate at the base and at both tips provided with a subglobose incrassation which is up to 0.1 mm in diameter; cells two, discrete, parallel, dehiscent throughout by a longitudinal slit; below the fertile part inside on the

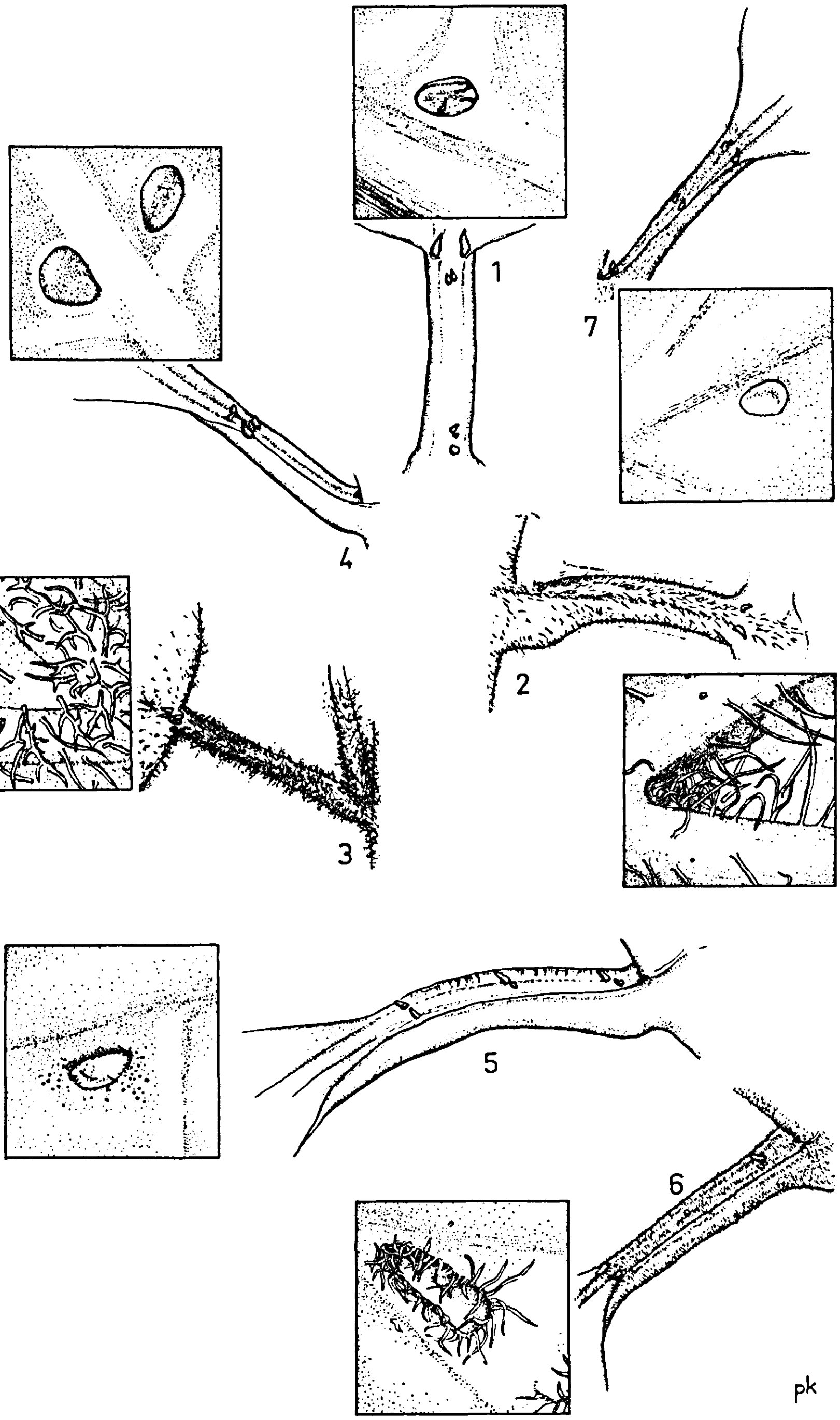
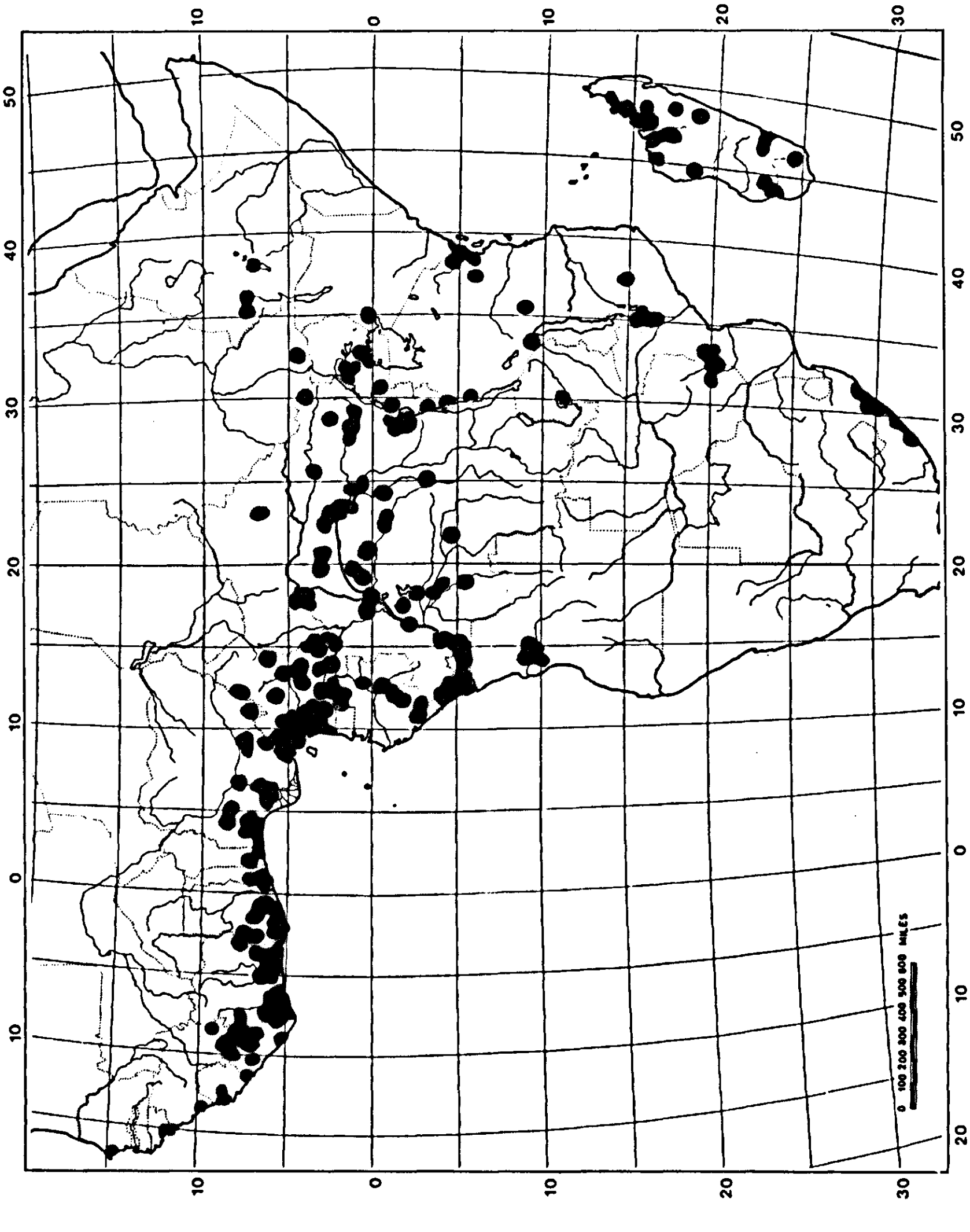


FIG. A. Leaf bases with petiole from above (2.7 ×) and domatia (27 ×); the number corresponds with the species number in this revision. (1. De Kruif 663; 2. De Kruif 659; 3. Gérard 5497; 4. De Kruif 701; 5. De Kruif 666; 6. Drummond 10187; 7. Decary 5298).



MAP A. Distribution of the genus *Oncinotis* Benth.

connective a nearly oblong patch, the retinacle, 0.1–0.4 × 0.05–0.1 mm, with minute hairs along the margin, adhering to the pistil head. *Pistil*: ovary hemi-inferior; carpels two, connate at the extreme base only, ovoid, laterally compressed, entirely or only apically densely pubescent; abruptly narrowed into the style, surrounded by a disk, adnate to the ovary at the base only, which is composed of a ring and 5 lobes, alternating with the stamens; style obconical to almost cylindrical, composed of two connate strands, glabrous; pistil head glabrous, consisting of a slightly 5-winged upper and a cylindrical lower portion, to the latter of which the 5 retinacles adhere; pistil head at the apex with two appendices, united at the base, glabrous. Placentas adaxial, ovuliferous at the abaxial side only. *Fruits* pendulous, composed of two (sub-)equal follicles, often recurved or upcurved, connate at their extreme base, dehiscent along an adaxial line of dehiscence, fusiform to narrowly cylindrical, at the apex acute, and when dry often curled, or obtuse; exocarp woody and at the outer surface smooth, sulcate, longitudinally winged; endocarp stiff, thinly pergamentaceous, smooth inside. *Seeds* attached to the adaxial side of the fruit, with at the apex a dense tuft of simple hairs (coma), directed towards the apex of the fruit; grain laterally compressed, convex at one side and concave at the other, elliptic to oblong, glabrous, subacute to obtuse at the base, truncate at the apex, subundulate at the margin, with the hilum at the apex and with a raphe descending to the base; testa very thin; endosperm fleshy, in a thin layer completely surrounding the embryo; embryo straight; cotyledons first complicate, later unfolded, ovate to elliptic, at the base cordate, rounded or cuneate, at the apex acute, glabrous on both sides, with 3–10 secondary veins; rootlets terete, rounded at the apex, glabrous.

Distribution: 7 species in Tropical Africa inclusive of Madagascar.

Note: The sections proposed by PICHON (1948a) and later rejected by him (1954) as artificial, are also not maintained here by the present author.

KEY TO THE SPECIES

1. Domatia absent or inconspicuous and consisting only of a tuft of hairs (see fig. A: 2 and 3); branchlets never glabrous 2
   Domatia usually present and consisting of pits with or without hairs along the margin (see fig. A: 1, 4, 5, 6 and 7); branchlets hairy or not 3
2. Leaves sparsely covered with simple and (less often) branched hairs; domatia consisting of a dense tuft of orange-brown simple bairs; petiole densely covered with simple and (less often) branched chairs, along the adaxial side with 1–5 glands and near the base of the blade with at least 1, sometimes 2 pairs of glands (see fig. A: 2); corolla 5.3–9.1 mm long; lobes 1–2.4 × as long as the tube; follicles shortly rusty brown-pubescent. West and Central Africa . . . . . **2. O. gracilis**

Leaves very densely covered with variously branched hairs; domatia very inconspicuous and consisting of some short simple or variously branched hairs; petiole very densely covered with variously branched hairs, along the adaxial side with 1–15 glands and near the base of the blade with 1–8, mostly only 2 glands (see fig. A: 3); corolla 4.1–5.9 mm long; lobes 0.7–1.1 × as long as the tube; follicles covered with an up to 2.5 mm thick, deciduous dense rusty brown or grey tomentum. Central Africa . **3. O. hirta**

3. Leaves with inconspicuous tertiary venation beneath, dull and distinctly paler than above; leafblade obovate and often emarginate at the apex; follicles narrowly cylindrical. West and Central Africa . . . . . **5. O. pontyi**

Leaves with conspicuous tertiary venation beneath, glossy and only slightly paler than above; follicles narrowly cylindrical or fusiform 4

4. Secondary veins strongly curved and shaping an angle of 10–35(–40)° with the midrib; pits with a dense tuft of hispid hairs along the margin; petiole puberulous or pubescent, along the adaxial side with 2 pairs of glands, usually one pair near the base of the blade (see fig. A: 6); follicles narrowly cylindrical, at the outer surface sometimes with orange-brown lenticels, greyish- to dark brown-pubescent. Western Nigeria to Ethiopia and Eastern South Africa. . . . . **6. O. tenuiloba**

Secondary veins not strongly curved and shaping an angle of 50–75° with the midrib; pits without hairs, or only with a few short hairs along the margin; petiole hairy or not, along the adaxial side with variously arranged glands (see fig. A: 1, 4 and 7); follicles narrowly cylindrical or fusiform 5

5. On each side 13–25 secondary veins, in the middle of the blade 1.5–5 mm from each other; pits always without a ciliate margin; corona 1–1.6 mm long; follicles narrowly cylindrical, 21–28 × as long as wide, at the outer surface smooth and glabrous. West Africa . . . . . **4. O. nitida**

On each side 4–12 secondary veins, in the middle of the blade (6–)8–28 mm from each other; pits sometimes with a ciliate margin; corona 0.1–0.9 mm long; follicles fusiform, 3–18 × as long as wide, at the outer surface not smooth, puberulous or pubescent, glabrescent 6

6. Corolla lobes 2–2.7 × as long as wide; branchlets glabrous; petiole glabrous, rarely puberulous; follicles 3–17 × as long as wide, 9.8–29.3 × 1.2–6.1 × 1.2–6.1 cm, longitudinally winged when mature, wings 0.1–3 mm wide, sometimes with many small protuberances; exocarp 1–8 mm thick. West and Central Africa . . . . . **1. O. glabrata**

Corolla lobes 4–7.6 × as long as wide; branchlets puberulous to rusty brown-pubescent; petiole puberulous or rather densely pubescent; follicles 14–18 × as long as wide, 8.1–19.5 × 0.4–2.1 × 0.4–2.1 cm, at the outer surface sulcate and often with pale brown lenticels; exocarp up to 1 mm thick. Madagascar . . . . . **7. O. tomentella**

1. Oncinotis glabrata (Baillon) Stapf ex Hiern 1898: 674; Stapf 1902: 222; Pichon 1954: 12–17; 13, pl. I, A–D; 17, fig. 1; Irvine 1961: 629; Huber 1963: 80; Adam 1975: 958–959; 1159, pl. 484; 1160, pl. 485. **Fig. 1; Map 1**

Basionym: *Motandra glabrata* Baillon 1888: 760; Schumann 1895b: 164.

Type: Angola: Cuanza Norte: Ambaca road, Welwitsch 5957 (P, holotype; isotypes: BM, COI, G, K, LISU, MO; photographs: BR, GB, GH, LISC, NY, PRE, WAG).

Heterotypic synonyms: *O. batesii* Stapf 1897: 272; 1902: 221–222; Hutchinson & Dalziel 1931: 49. Type: Cameroun: Efulen (= Efoulan), Bates 403 (K, holotype; isotypes: BM, E, G, Z).

O. glandulosa Stapf 1902: 221: 1904: 611–612. Type: Cameroun: Bipinde (= Bipindi), Zenker 1552 (K, holotype; isotypes: BM, BP, BR, COI, E, G, HBG, L, M, MO, NY, P, S, W, WAG, Z).

O. jespersenii De Wild. 1908: 256 (as *O. Jesperseni*). Type: Zaïre: Equateur: near Mondombe (BR, holotype).

Climbing *shrub* or *liana*, 1.2–40 m high climbing over shrubs and in trees, 3–50 m long or more. *Trunk* 1.5–12 cm in diameter; bark greyish-brown, first smooth, later longitudinally fissured and with large pale brown lenticels; inner bark pale brown, with rope-like fine pale brown fibres; wood creamy, soft. *Branches* pale or dark brown, sulcate, with pale brown lenticels; branchlets brownish-green to grey, sulcate, glabrous. *Leaves*: petiole 7–24 mm long, glabrous or rarely puberulous, along the adaxial side with small triangular glands, up to 1 mm long, often 1–3 clusters of 2–3 glands; blade elliptic to ovate (or exceptionally obovate or narrowly so), 1.6–3(–4.1) × as long as wide, 3.9–15.4 × 1.5–7.4 cm, acuminate (or exceptionally rounded or emarginate) at the apex, cuneate at the base, sometimes undulate or recurved at the margin, papery to coriaceous, glabrous or rarely puberulous on the midrib and veins, dark to medium green above, slightly paler beneath, glossy, especially so above; on each side 5–12 secondary veins; tertiary venation conspicuous, reticulate to faintly scalariform; domatia sometimes absent, usually consisting of pits, sometimes with a ciliate margin. *Inflorescence* (2.5–)4–12.5 × (1.5–)2–5 cm. Peduncle and branches rusty brown-pubescent, glabrescent. Pedicels 2–4(–5) mm long, densely rusty brown-pubescent, glabrescent. Bracts, and – if present – bracteoles, ovate to triangular or narrowly so, 1.2–1.7 × 0.3–1.2 mm, acute at the apex, outside rusty brown-pubescent. Sepals yellowish-green to pale brown, ovate or broadly so, 1.1–3 × as long as wide, 1.5–3.6 × 1.1–2.2 mm, outside rusty brown-pubescent and there often with glabrous patches. *Corolla* in the mature bud 2.2–3.5 × as long as the calyx, 6.9–11.1 mm long; tube yellow to greenish-yellow, urceolate, widest in the middle, 1.1–1.4 × as long as the calyx, 2.5–4.7 mm long, 2–2.5 mm in diameter at the middle, 1.5–1.9 mm at the base and at the apex; inside with tufts of hairs at 1.2–1.3 mm from the base; lobes yellow to greenish-yellow, triangular, 1–1.8 × as long as the tube, 2–2.7 × as long as wide, 2.3–5.8 × 0.9–2.5 mm; outside glabrous or puberulous, usually only so at the base; corona first yellow to greenish-yellow, later turning white, 0.5–0.9 mm long,

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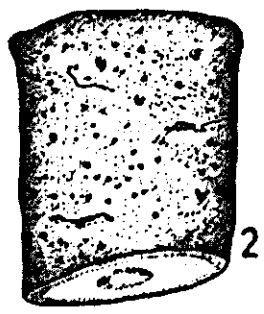

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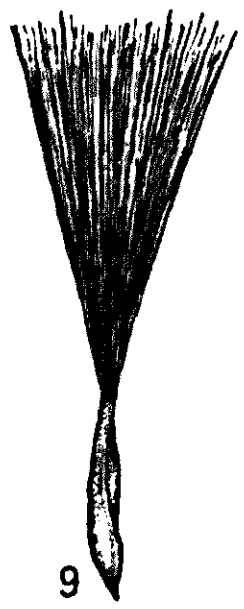

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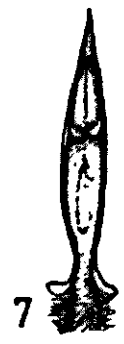

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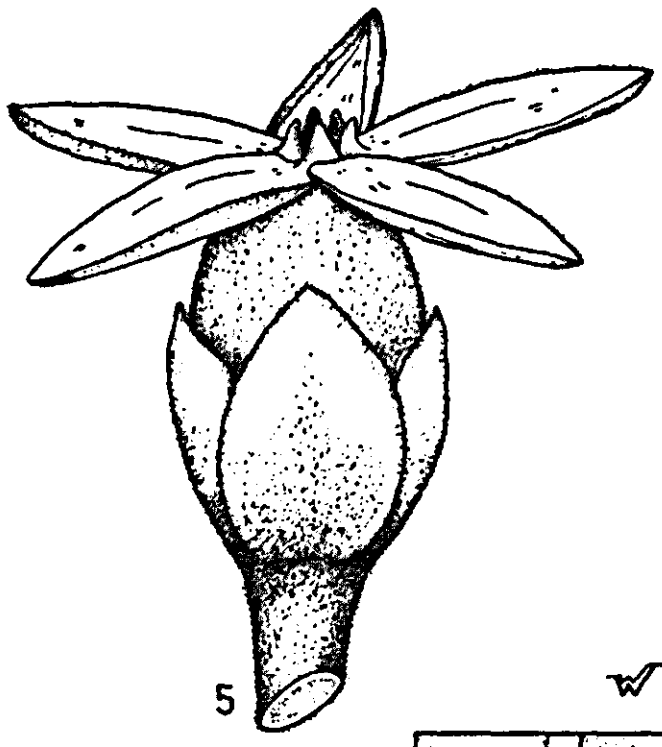

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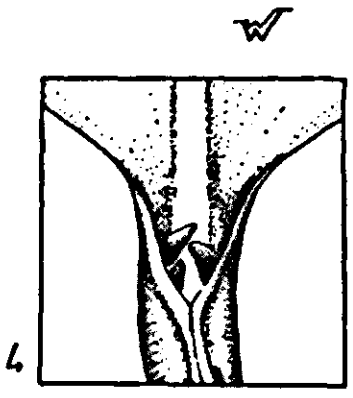

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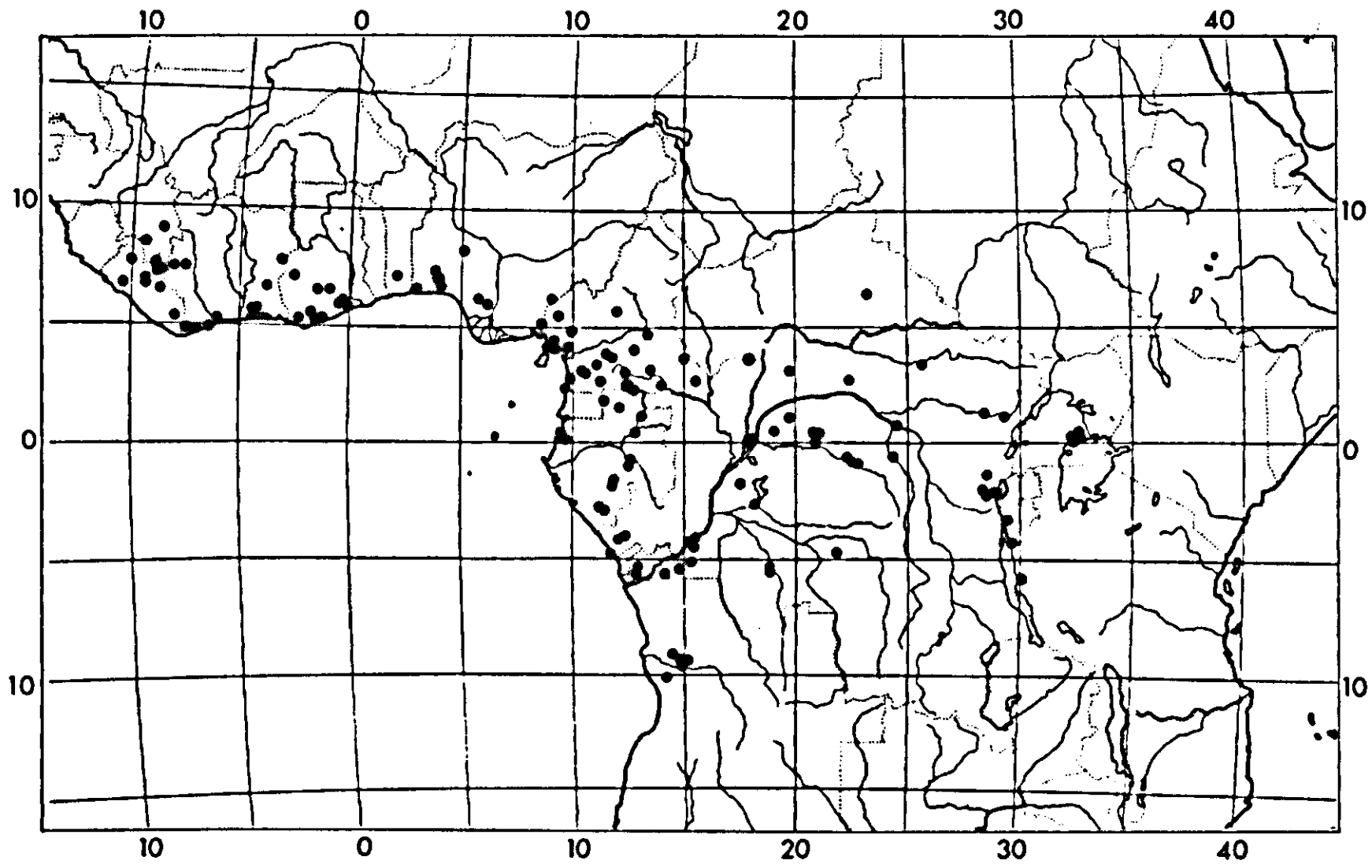
pubescent at the base. *Stamens* inserted at 0.8–0.9 mm from the base of the tube; filaments 0.2–0.3 mm long; anthers 7–13 × as long as the filaments, 2.4–2.8 mm long; tails 0.3–0.4 mm long; fertile portion 1–1.3 mm long. *Pistil* 2.9–3.5 mm long; carpels 0.8–1.3 × 0.5–0.9 × 0.2–0.4 mm, superior portion 0.3–0.5 mm long; disk: ring 0.2–0.5 mm high, lobes 0.1–0.3 × 0.1–0.3 mm; style 0.1–0.2 mm long; pistil head: upper portion 0.2–0.6 × 0.2–0.4 mm, lower portion 0.9–1.1 × 0.2–0.4 mm; appendices 0.5–0.7 mm long. Each placenta with 60–120 ovules. *Fruits*: follicles fusiform, or almost so, often recurved or less often upcurved, shaping an angle of 40–180°, 3–17 × as long as wide, 9.8–29.3 × 1.2–6.1 × 1.2–6.1 cm; exocarp 1–8 mm thick, very hard, longitudinally winged when mature; wings undulate, in the mature fruit 0.1–3 mm wide and up to 2 mm thick, sometimes with many small protuberances, puberulous and glabrescent. *Seeds* numerous; coma 10–75 mm long; grain 5–27 × 2–6.5 × 1.3 mm, smooth or rugose, often only minutely so; cotyledons 5–26.5 × 1.8–6 mm; rootlet 3–4.5 mm long.



MAP 1. *Oncinotis glabrata* (Baillon) Stapf ex Hiern

Distribution: Tropical Africa from Guinea(–Conakry) to Uganda and Tanzania and south to Angola.

FIG. 1. *Oncinotis glabrata* (Baillon) Stapf ex Hiern: 1. flowering branch, ⅔ ×; 2. part of branch, ⅔ ×; 3. domatia, 4 ×; 4. leaf base with petiole from above, 4 ×; 5. flower, 6 ×; 6. opened flower showing 2 stamens and the pistil; the left stamen detached from the pistil; calyx, part of corolla, and 3 stamens removed, 8 ×; 7. stamen, adaxial side, 8 ×; 8. fruit, ⅔ ×; 9. seed, ⅔ ×. (1, 5–7. Le Testu 4177; 2. De Kruif 712; 3–4. De Kruif 663; 8–9. A. Léonard 3318).

Ecology: Rain forets, swamp forests, secondary deciduous forests and gallery forests, on sand, clay and rocky outcrops; alt. 0–2200 m.

A selection of the ca 360 specimens examined:

GUINEA(–Conakry): between Moussadougou and Lola (fl. Mar.) Chevalier 20966 (P); near Macenta, along road to Cossankoro (fl. June) Lisowski 60281 (POZG); Dyéké (= Diecke), near N'Zérékoré (fr. Sept.) Baldwin 13324 (K, MO).

LIBERIA: Kondessu (= Kondezu), Boporo Distr. (fr. Dec.) Baldwin 10684A (K); Dobli Isl. (= Ting Dowuli), St. Paul R. (fl.) Bequaert 22 (A, K); Belefanai, Gbarnga Distr. (fr. Dec.) Baldwin 10552 (K); Sanokwele (= Sanniquellie) (fr. Sept.) Baldwin 13271 (BR, K, MO, NY, P, PRE, WAG); Tappita (= Tapeta) (fr. Aug.) Baldwin 9066A (K); near Kanweake, km 70 road Chiehn (= Tschien)-Cape Palmas (= Harper) (fl. Mar.) J. J. F. E. de Wilde & Voorhoeve 3673 (A, BR, K, WAG).

IVORY COAST: near Oua (fl. May) Aké Assi 11801 (UCJ, WAG); Mt. Tonkoui (fl. Apr.) Aké Assi 8033 (UCJ, WAG); km 14 road Grand-Béréby-Tabou (Nov.) De Kruif 706 (UCJ, WAG); km 13 road from km 26 Sassandra-San Pedro-road to Monogaga (Nov.) De Kruif 712 (UCJ, WAG); km 24 road Sassandra-Monogaga (Nov.) De Kruif 694 (UCJ, WAG); km 65 road Abidjan-Ndouci (imm. fr. Sept.) De Kruif 346 (UCJ, WAG); Yapo Forest (Nov.) De Kruif 692 (UCJ, WAG); 1 km ENE of Abié, 7 km N of Yakassé Mé (Oct.) De Kruif 663 & 664 (UCJ, WAG); Left bank Bayakokoré R., 1 km S of Bouroukro, on Tanda-Koun-Fao road (Oct.) De Kruif 681 (UCJ, WAG).

GHANA: road Asukesi For. Res. to Atroni (fl. Mar.) Enti FE 1290 (BR, K, MO, WAG); Fure For. Res. (fl. May) Hall & Nabooh GC 46655 (MO, WAG); Ateiku (fl. May) Viane 1951 (K, P); near Adiebeba, km 3 Kumasi-Bekwai road (Sept.) Krukoff 1947–7 (MO, NY); Atewa For. Res. (fl. Mar.) Hall & Lock GC 44149 (MO, WAG); Aburi (fl. May) Johnson 883 (K).

BENIN REPUBLIC: near Abomey (Feb.) Chevalier 23202 (P).

NIGERIA: Kwara State: Ekeji-Ipetu For. Res. (fr. Dec.) Onochie FHI 5239 (K). Ogun State: Omo For. Res., on road to Itemi, 22 km NW of Omo (fr. June) Gentry & Pilz 32713 (MO); Eredo, Iraro Distr. (fl. May) Gbile & Latilo FHI 20908 (NY, WAG). Bendel State: between Sapoba and Benin City (fl. Mar.) Thompson 20 (K). Cross River State: Afi For. Res., on Kanyang-Kataban footpath (May) Latilo FHI 30990 (K); Oban (fl.) Talbot 1692 (BM, K, Z).

CAMEROUN: Mamfe (fr. Nov.) Krukoff 81 (NY); Mt. Nlonako (fl. Dec.) Bamps 1568 (BR, YA); Victoria (fl. Oct.) Winkler 478 (G, L, Z); Douala (fr. Jan.) Baldwin 14006 (K, MO); near Gba, 40 km NE of Linté (fl. Sept.) Letouzey 8018 (BR, K, P, WAG, YA); 40 km W of Bertoua, 1–10 km N of Mbang (fl. May) Breteler 2945 (WAG); Ayong (= Long) R., between Zogéla and Mbomba (fl. Apr.) Letouzey 1801 (P, YA); Lomié (fr. Apr.) Breteler 1270 (K, LISC, P, WAG, YA); Yaoundé (fl.) Zenker & Staudt 530 (BM, BR, COI, K, M, NY, P, PRE, S, Z); ibid. (fl.) Zenker & Staudt 544 (BM, COI, K, P, PRE, S, Z); Bitye R. (fl.) Bates 1083 (BM, BR, MO, Z); Bipinde (= Bipinddi) (fl. Apr.) Zenker 554 (A, BR, C, G, GH, P, U, WAG); ibid. (fl.) Zenker 1552 (BM, BP, BR, COI, E, G, HBG, K, L, M, MO, NY, P, S, W, WAG, Z, type of *O. glandulosa*); ibid. (fl.) Zenker 2208 (A, BM, BP, COI, E, G, HBG, K, L, M, MO, P, S, WAG, Z); ibid. (fl.) Zenker 3013 (A, BM, BP, BR, E, G, HBG, L, M, MO, P, S, W, WAG, Z); Efulen (= Efoulan) (fl. Oct.) Bates 403 (BM, E, G, K, Z, type of *O. batesii*); near Kribi (fr. Dec.) Krukoff 169 (MO, NY); Okpweng, km 40 road Djoum-Oveng (fl. Nov.) Mezili 57 (BR, P, WAG, YA); between Mabam and Ngoïla, 2 km S of Ngoïla, in the direction Lomié-Souanké (K, P, WAG, YA); near Mopwo, km 22 road Yakadouma-Batouri (fl. June) Letouzey 5278 (P, YA); near Mikel, about km 70 road Yokadouma-Moloundou (fl., imm. fr. Nov.) De Kruif 787 (WAG, YA).

CENTRAL AFRICAN REPUBLIC: Yalinga (fl., fr.) Le Testu 4177 (BM, BR, P, WAG); Boukoko (fl. Sept.) Tisserant 184 (BM, BR, K, P); ibid. (fl. Aug.) Tisserant 1072 (BM, BR, K, LISC, P, WAG).

EQUATORIAL GUINEA: Beba, along road to Campo-area (fl. Nov.) Tessmann 604 (K).

GABON: Oyem (fl. Dec.) Le Testu 9417 (BM, P); Mvini, between Ogooué R. and Cameroun border (fl. Aug.) Le Testu 9210 (BM, BR, LISC, P, WAG); Bélinga (fr.) N. Hallé 2861 (P); Makokou, Ipassa Plateau (fl. June) Farron 7546 (P); Sibang near Libreville (fl. Feb.) Klaine 2726 (A, BR, K, P); Madoucou (fl. June) Le Testu 7388 (BM, BR, LISC, P, WAG); Moucongo (fl. Oct.) Le Testu 6338 (BM, BR, LISC, MO, P, WAG); Mbigou (fl. May) Le Testu 8825 (BM, BR, P, WAG); Tchibanga (fl. Nov.) Le Testu 1836 (BM, BR, K, LISC, MO, NY, P, WAG); Wounzi-Mambo

area (fl. Aug.) Le Testu 2093 (BM, BR, K, LISC, P).

CONGO (–Brazzaville): Kakamoéka (fl. Nov.) Bouquet 1942 (P); Pointe-Noire, 5 km after border on road to Cabinda (imm. fr. Jan.) Farron 4809 (P); M'Bamou Isl., Stanley Pool (fl. Nov.) F. Hallé (P).

ANGOLA: Cuanza Norte: Golungo Alto, Calungula (fl., fr.) Gossweiler 4869 (BM, K); Golungo Alto, Queta Mts. (fr. Oct.) Welwitsch 5958 (BM, COI, K, LISU); between Sange and Luinha, near Granja de Sao Luiz (fl. Oct.) Gossweiler 4395 (BM, COI, K, LISC); Ambaca road (fl. Feb, fr. June) Welwitsch 5957 (BM, COI, G, K, LISU, MO, P, type).

ZAÏRE: Equateur: Boketa (fl., fr. Sept.) Evrard 1785 (BR); Dundusana (fl. Sept.) Mortehan 452 (BR); road Bofongi-Maringa R., Basankusa Terr. (fl. Sept.) Evrard 4911 (WAG, Z); Befale, Ifale R. (fr. Nov.) Evrard 2920 (BR); Eala (fl. Feb.) Pynaert 1091 (BR); near Mondombe (fl. Nov.) Jespersen 12 (BR). Haut-Zaïre: Bambesa (fl. Nov.) Gérard 2525 (BR, WAG); Epulu, near Mambasa (fl. Nov.) Hart 342 (BR, K); between Irumu and Mambase (fl. Oct.) Lebrun 4187 (BR, EA, WAG); Yangambi (fl. Oct.) Louis 6428 (BM, BR, K, Z); ibid., near Isalowe R. (fl., fr. Nov.) Louis 6512 (BM, BR, EA, K, P); Opala (fl. Feb.) Louis 14145 (BR). Kivu: km 2 road Bitso-Gungu, Masisi Terr. (fl. May) Pierlot 1982 (BR, WAG); Kalehe (fr. Mar.) A. Léonard 3318 (BR, WAG). Bandundu: between Kutu and Lukolela (fl. Nov.) Lebrun 6612 (BR, EA, WAG); Bokoro (fl. May) Jans 841 (BR); Kiaka (fl. Nov.) Devred 968 (BR, K). Kasai Occidental: Bena Longo, Mweka Terr. (fr. Apr.) Liben 2785 (BR). Bas-Zaïre: Luki, near Kinkoko R. (fl. Oct.) Donis 2073 (BR); Donda II, Songolo Terr. (fl. Dec.) Compère 1065 (BR, EA, K, PRE); M'vuazi (fl. Nov.) Devred 382 (BR, K). Kinshasa: Binza (fl. May) Pauwels 5008 (BR, WAG).

BURUNDI: Bugarama, Terr. Muramvya (buds, June) Lewalle 5995 (BR, K, WAG); Kigwena, Bururi Terr. (fl. Apr.) Lewalle 6651 (BR).

UGANDA: Entebbe (fl. Nov.) Brown 353 (K); Kipayo (fl. May) Dümmer 809 (K, MO, NBG, P, US); Mabira F.R., near Kiwala (fl. Oct.) Dümmer 2988 (BM, K, US).

TANZANIA: Western Province: Kungwe-Mahali Peninsula, Mpanda Distr. (fl. Sept.) R. M. Harley (EA, K).

Notes: 1. Many authors (e.g. STAPF 1902: 222; HUTCHINSON & DALZIEL 1931: 49; PICHON 1948b: 212; 1950: 141, pl. IX, fig. 48; 1954: 12) consider *O. campanulata* Schumann as a synonym of *O. glabrata*. The type specimen of *O. campanulata*, Zenker & Staudt 19, undoubtfully belongs to *Baissea*. A detailed description and a distribution map of this *Baissea campanulata* (Schumann) De Kruif comb. nov. will be given by the present author in his forthcoming publication on *Baissea*.

2. In Central Africa *O. glabrata* and *O. pontyi* may be confused, see note with *O. pontyi*.

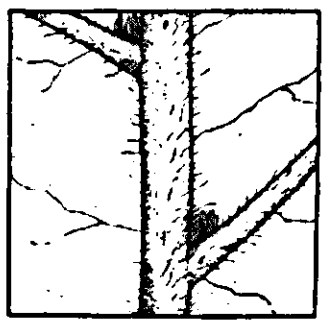
2. Oncinotis gracilis Stapf 1894: 124; Oliver 1894: pl. 2346; Stapf 1902: 223; 1904: 612; Hutchinson & Dalziel 1931: 49; Pichon 1954: 28–31; 29, pl. II, F; 17, fig. 1; Irvine 1961: 629; Huber 1963: 80; Adam 1975: 959; 1161, pl. 486.

Fig. 2; Map 2

Type: Nigeria: Ogun State: Illaro (= Ilaro), Millen 106 (K, holotype).

Heterotypic synonyms: *O. chlorogena* Schumann 1900: 307; 1903: 320–321. Type: Nigeria: Lagos State: Ikorodu, *Schlechter 12996* (holotype not seen, destroyed in B; lectotype: Z; other isotypes seen: BM, BR, G, K, L, P, PRE, WAG).

O. thyrsiflora Schumann ex Stapf 1904: 612: Pichon 1954: 31–32; 29, pl. II, G; 17, fig. 1. Type : Cameroun: Bipinde (= Bipindi), Zenker 2588 (K, holotype; isotypes: BM, E, G, HBG, P, W, Z).



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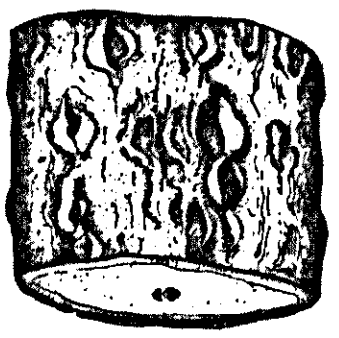

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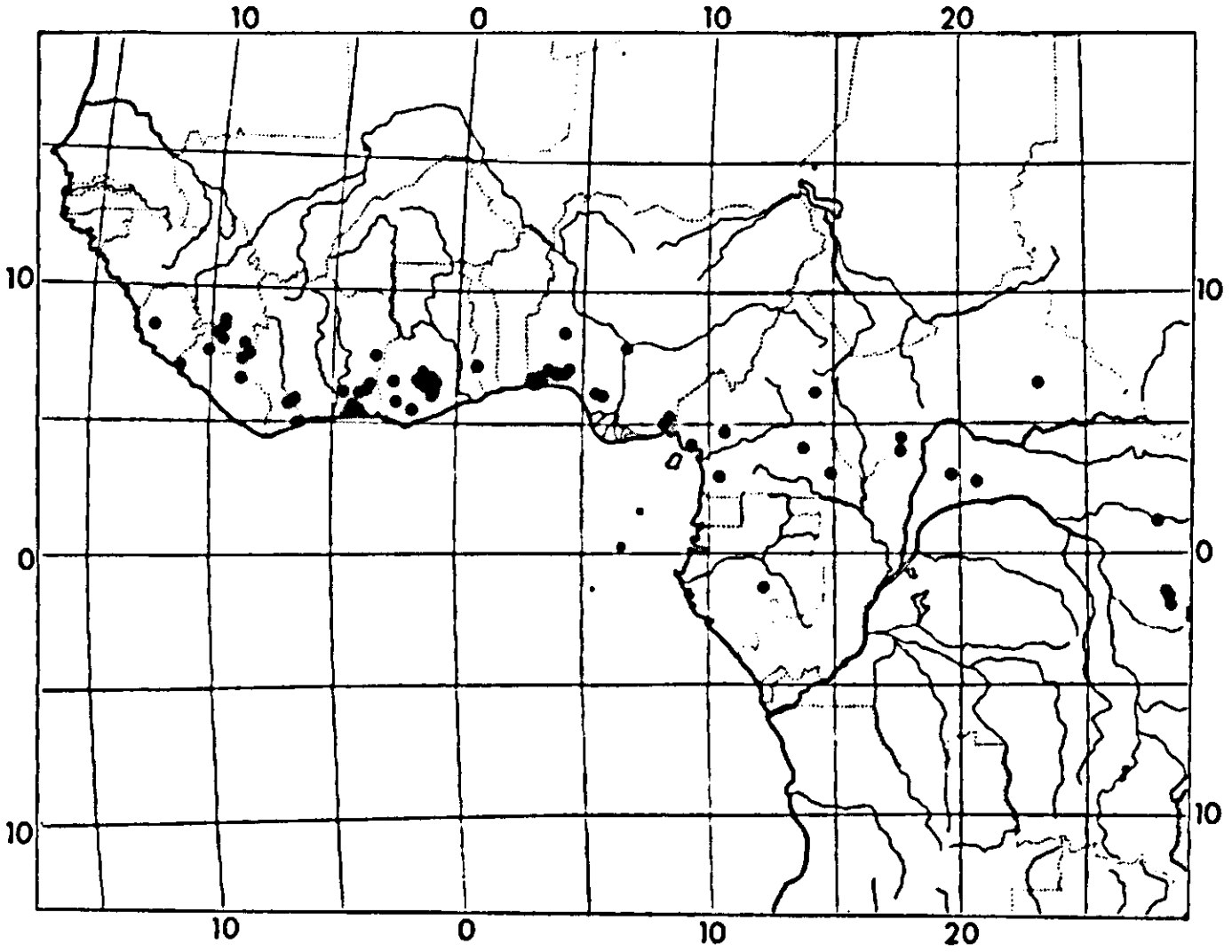
O. mitis Stapf 1914: 540–541. Type: Zaïre: Haut-Zaïre: Ituri: near Bulika, between Mawambi and Awakubi (= Avakubi), Mildbread 3217 (holotype not seen), destroyed in B; lectotype: K).

O. malchairi De Wild. 1915: 104; 1920: 22. Type: Zaïre: Equateur: near Likimi, Malchair 333 (BR, holotype).

Climbing *shrub* or *liana*, 1–20 m high climbing over shrubs and in trees, 5–30 m long or more. *Trunk* 1–3 cm in diameter; bark dark brown to greyish-brown, first smooth, later longitudinally fissured, with large pale brown lenticels; inner bark brownish with rope-like fine pale straw-coloured fibres; wood brownish, rather soft. *Branches* brown to grey, sulcate, with large brown lenticels; branchlets medium green to brownish-green, sulcate, rusty brown-pubescent. *Leaves*: petiole (3–)9–20 mm long, densely covered with up to 1 mm long simple and – less often – branched hairs; along the adaxial side mostly in the upper half with 1–5 up to 0.7 mm long ovoid glands and near the base of the blade with at least 1, sometimes 2 pairs of triangular glands, up to 1 mm long; blade elliptic to obovate, 1.6–3 × as long as wide, 3–14 × 1.3–5.9 cm, acuminate (or exceptionally emarginate) at the apex, cuneate or rounded at the base, sometimes undulate or recurved at the margin, papery to subcoriaceous, sparsely covered with up to 1 mm long simple and – less often – branched hairs, especially along the veins and the margin, dark green beneath, glossy, especially so above; midrib pubescent, slightly glabrescent; on each side 4–10 secondary veins, often reddish, especially so on young leaves; tertiary venation rather inconspicuous, reticulate; domatia absent or consisting of a dense tuft of up to 1 mm long pale to orange-brown simple hairs. *Inflorescence* (2–)3–7.5 × 1.5–3.5(–4.5) cm. Peduncles and branches medium to pale green with a pale brown indumentum. Pedicels 2–3(–4) mm long, medium to pale green, with a pale brown indumentum. Bracts, and – if present – bracteoles, ovate to triangular or narrowly so, 0.3–1.6 × 0.3–0.6 mm, obtuse to acute at the apex, outside pale brown-pubescent. *Sepals* bright green to brownish-green, ovate to triangular, 1.2–3 × as long as wide, 0.9–2.2 × 0.6–1.2 mm, outside pale brown-pubescent. *Corolla* in the mature bud 2–7.5 × as long as the calyx, 5.3–9.1 mm long; tube yellow to pale green or sometimes white, urceolate, widest below the middle and there 1.4–1.9 mm wide, 1–3.5 × as long as the calyx, 2.5–3.2 mm long, 1–1.2 mm in diameter at the base and at the apex; inside with tufts of hairs at 0.9–1.2 mm from the base; lobes yellow to pale green or sometimes white, narrowly ovate to narrowly triangular, 1–2.4 × as long as the tube; (2.1–)2.6–6.9 × as long as wide, 3.2–6.2 × 0.7–1.5 mm, outside glabrous or puberulous, usually only so at the base; corona yellow to pale green, often later turning white, 0.3–0.8 mm long, pubescent at the base.

FIG. 2. *Oncinotis gracilis* Stapf: 1. flowering branch, ⅔ ×; 2. part of branch, ⅔ ×; 3. leaf base with petiole from above, 4 ×; 4. domatia, 4 ×; 5. hairs of leaves, 25 ×; 6. flower, 4 ×; 7. opened flower showing 2 stamens and the pistil; the left stamen detached from the pistil; calyx, part of corolla, and 3 stamens removed, 8 ×; 8. stamen, adaxial side, 8 ×; 9. fruit, ⅔ ×; 10. seed ⅔ ×. (1. Chevalier 20789; 2, 6–8. Leeuwenberg 12141; 3–5, 9. De Kruif 659; 10. Baldwin 13468).

Stamens inserted at 0.6–0.9 mm from the base of the tube; filaments 0.2–0.3 mm long; anthers 9–12 × as long as the filaments, 1.8–2.8 mm long; tails 0.2–0.4 mm long; fertile portion 0.9–1.3 mm long. *Pistil* 2.5–3.2 mm long, carpels 0.8–1.2 × 0.5–0.9 × 0.2–0.4 mm, superior portion 0.3–0.7 mm long; disk: ring 0.1–0.3 mm high, lobes 0.2–0.4 × 0.1–0.3 mm; style 0.1–0.2 mm long; pistil head: upper portion 0.4–0.6 × 0.2–0.4 mm, lower portion 0.6–1.1 × 0.2–0.4 mm; appendices 0.2–0.3 mm long. Each placenta with 20–40 ovules. *Fruits* often subtended by the persistent calyx, follicles narrowly cylindrical, shaping an angle of 90–250°, 18–40 × as long as wide, 8.1–30 × 0.4–0.8 × 0.4–0.8 cm; exocarp up to 1 mm thick, at the outer surface sulcate, shortly rusty brown-pubescent, slightly glabrescent. *Seeds* up to 30 in each follicle; coma 17–52 mm long; grain 14–23 × 3–4 × 0.5–2 mm; testa smooth or minutely rugose; cotyledons 1.2–10.1 × 0.3–4.2 mm; rootlet 0.7–4.8 mm long.



MAP 2. *Oncinotis gracilis* Stapf

Distribution: Tropical Africa from Sierra Leone to Zaïre in the east and to Angola in the south.

Ecology: Mostly light or secondary deciduous forests, on sand and clay; alt. 0–1000 m.

A selection of the ca 100 specimens examined:

SIERRA LEONE: Yonibana (fr. Oct.) Thomas 4128 (K).

GUINEA(–Conakry): near Macenta (fr. May) Lisowski 60799 (POZG); Pela, near N'Zérékoré (fr. Sept.) Baldwin 13312 (K, MO, NY, P, PRE, WAG); between Bérézia and Diorodougou (fl. Feb.) Chevalier 20789 (P, WAG).

LIBERIA: Javajai, Boporo Distr. (fr. Nov.) Baldwin 10269A (K); Kondessu (= Kondezu), Boporo Distr. (imm. fr. Dec.) Baldwin 10683 (K); Nikabuzu (fl. Mar.) Bequaart 119 (K); Yekepa, near Mt. Nimba (fr. July) Adam 28780 (MO, PRE, WAG); Sanokwele (= Sanniquellie) (fr. Sept.) Baldwin 9537 (K, MO); Tappita (fr. Aug.) Baldwin 9074 (K).

IVORY COAST: 9 km W of Soubré, along road to Niamagui (fl. May) Leeuwenberg 12141 (WAG); 5 km N of Sassandra (fr. Dec.) Leeuwenberg 2257 (BR, C, COI, E, HBG, K, L, M, P, WAG); 6–7 km N of Rubino (imm. fr. June) Garnier PG/UB 19 (K); Bouroukrou (Dec.–Jan.) Chevalier 16661 (P); Zaranou (fl. Mar.) Chevalier 17643 (P); Adiopodoumé (imm. fr. Oct.) De Kruif 659 (UCJ, WAG); ibid. (fr. Aug.) W. J. J. O. de Wilde 646 (BR, EA, K, MO, P, PRE, WAG, Z); Angedédou Forest (fl. Apr.) Geerling & Bokdam 2517 (BR, K, PRE, WAG); W of La Mé R., about 20 km NE of Abidjan (fl. May) Leeuwenberg 4169 (BR, HBG, K, MO, P, WAG).

GHANA: Near Kwapon, about 100 km WSW of Kumasi (fr. Dec.) Oldeman 734 (BR, K, MO, P, WAG); Bura R. For. Res. (buds) Andoh 3266 (A, BM, BR, K); near Ateiku (fr. Sept.) Krukoff 1949–15 (MO); Kumasi (fr. Oct.) Baldwin 13468 (K); Bobira For. Res. (fr. Jan.) Enti Sp 555 (BR, MO, WAG).

TOGO: N of Kpalimé, 4 km W of Kpété-Tsiko, on the road to Ndigbé Apédomé (fl. May) Hakki, Leuenberger & Schiers 790 (WAG).

NIGERIA: Kwara State: Lokoja (fl. Mar.). Oyo State: Gambari (fl.) Macgregor 583 (K); Mamu For. Res., Ibadan Distr. (fl. Mar.) Keay FHI 22531 (K); Shasha For. Res., Ijebu Distr. (fl. Mar.) Richards 3190 (BM, BR, COI, MO, NY). Ogun State: Ilaro For. Res., about 12 km SE of Ilaro, Abeokuta Distr. (fl. May) Van Meer 750 (WAG); Illaro (= Ilaro) (fl. Jan.) Millen 106 (K, type). Lagos State: Ikorodu (fl. Mar.) Schlechter 12996 (BM, BR, G, K, L, P, PRE, WAG, Z, type of *O. chlorogena*). Bendel State: Sapoba, E of Jamieson R. (fr. Nov.) Keay FHI 25572 (K). Cross River State: Oban (fl.) Talbot 1675 (BM, K, Z).

CAMEROUN: near Tiko (Nov.) Krukoff 72 (MO); near Ndokononoro, 15 km SSW of Ndikiniméki (fr. Dec.) Letouzey 10816 (K, P, WAG, YA); Bipindi (fl.) Zenker 2588 (BM, E, G, HBG, K, P, W, Z, type of *O. thyrsiflora*); ibid. (fl.) Zenker 3102 (BM, E, G, K, Z); Abussa (fl. Apr.) Mildbread 9056 (K); near Dyébadop (fl. Apr.) Letouzey 3954 (P, WAG, YA); between Gribé and Song, 65 km SSW of Yokadouma (fl. Mar.) Letouzey 12157 (BR, K, P, WAG, YA).

CENTRAL AFRICAN REPUBLIC: La Maboké on Mbaïki-Boda road (fr. Dec.). Badré 304 (P); Boukoko (fr. Mar.) Tisserant 788 (BM, BR, P); ibid. (fl. Mar.) Tisserant 2484 (BM, BR, P, WAG); Yalinga (fl. Apr.) Le Testu 4681 (BM, BR, LISC, MO, P).

ZAÏRE: Equateur: Boketa (imm. fr.) Evrard 1296 (BR); near Likimi (fl. Apr.) Malchair 333 (BR, type of *D. malchairi*). Haut-Zaïre: near Bulika, between Mawambi and Awakubi (= Avakubi), Ituri Terr. (fl. Apr.) Mildbraed 3217 (K, type of *O. mitis*). Kivu: Musenge, Walikale Terr. (fl. Dec.) A. Léonard 2152 (BR, P, WAG); Turole, Bunyakiri, Kalehe Terr. (fl. Jan.) Gutzwiller 2525 (BR, WAG).

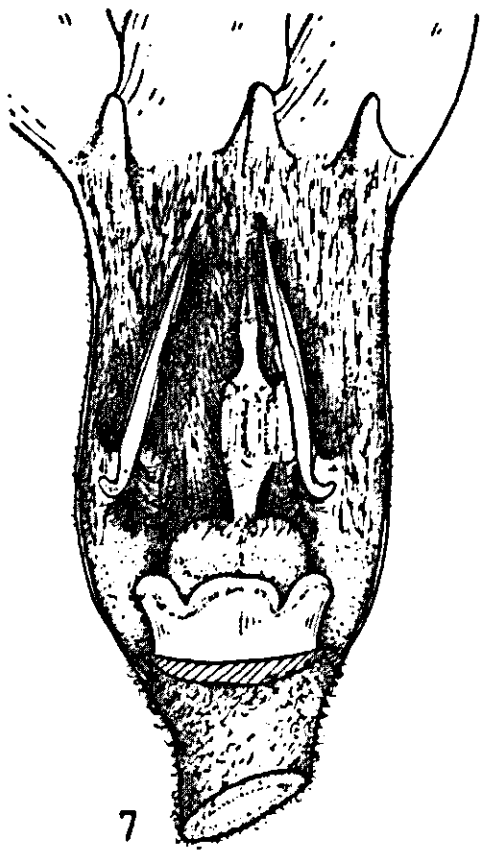
ANGOLA: sin. loc. (fl.) Gossweiler recd. 1906 (BM).

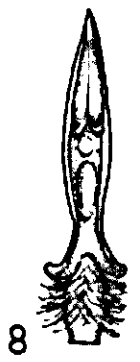
Note: Although in Central Africa *O. gracilis* and *O. hirta* sometimes closely resemble each other the two species can always be readily distinguished by the presence of variously branched hairs on the leaves of *O. hirta* (see fig. 2 and 3).

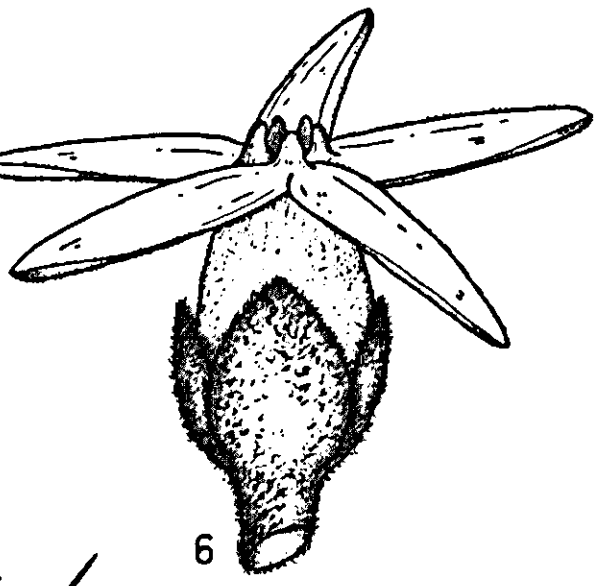
3. Oncinotis hirta Oliver 1877: 25, pl. 1232; Hiern 1898: 674; Radlkofer 1883: 404–405; Schumann 1895a: 179; Stapf 1902: 223; 1904: 612; De Wildeman 1932: 420 (as *O. picta*); Pichon 1954: 32–34; 17, fig. 1. **Fig. 3; Map 3**

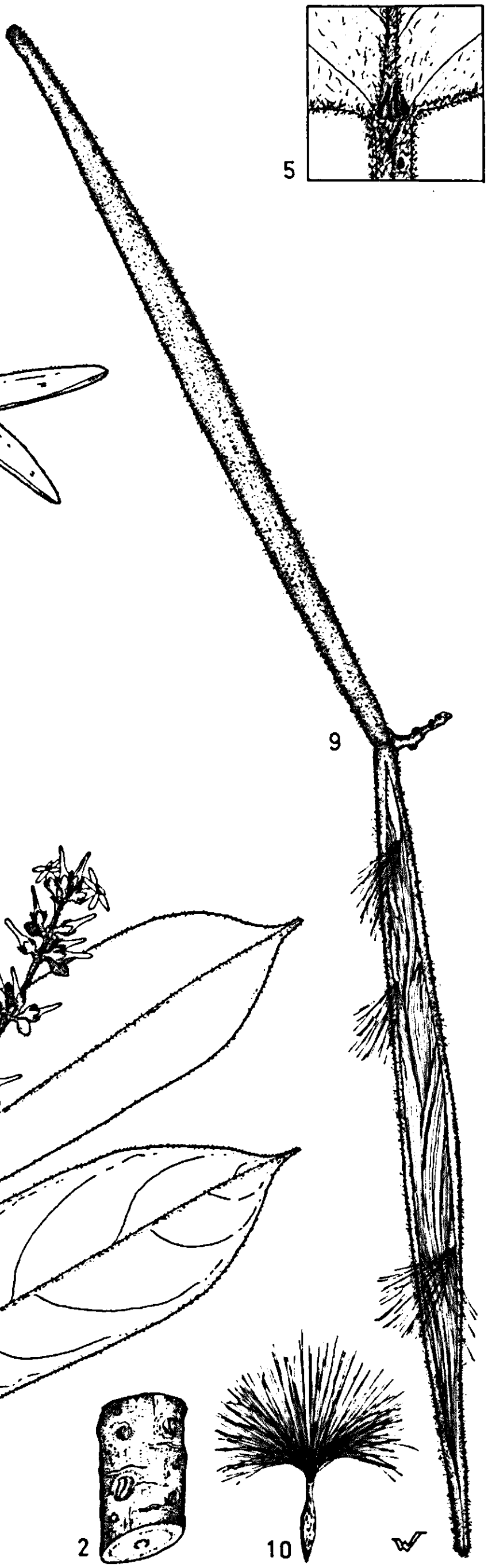
Type: Congo(–Brazzaville): Loango near Makunga (= Makongo), Soyaux 147 (K, holotype; isotypes: Bp, K, M, W).

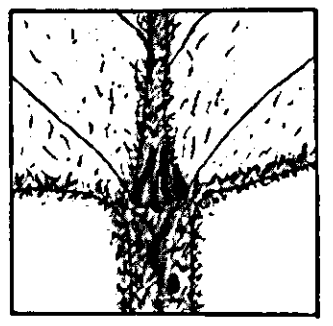
Heterotypic synonym: *Motandra welwitschiana* Baillon 1888: 760; Schumann 1895a: 164. Type: Angola: Cuanza Norte: Golungo Alto, between Luiz Simôes

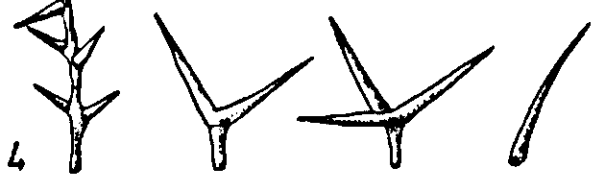


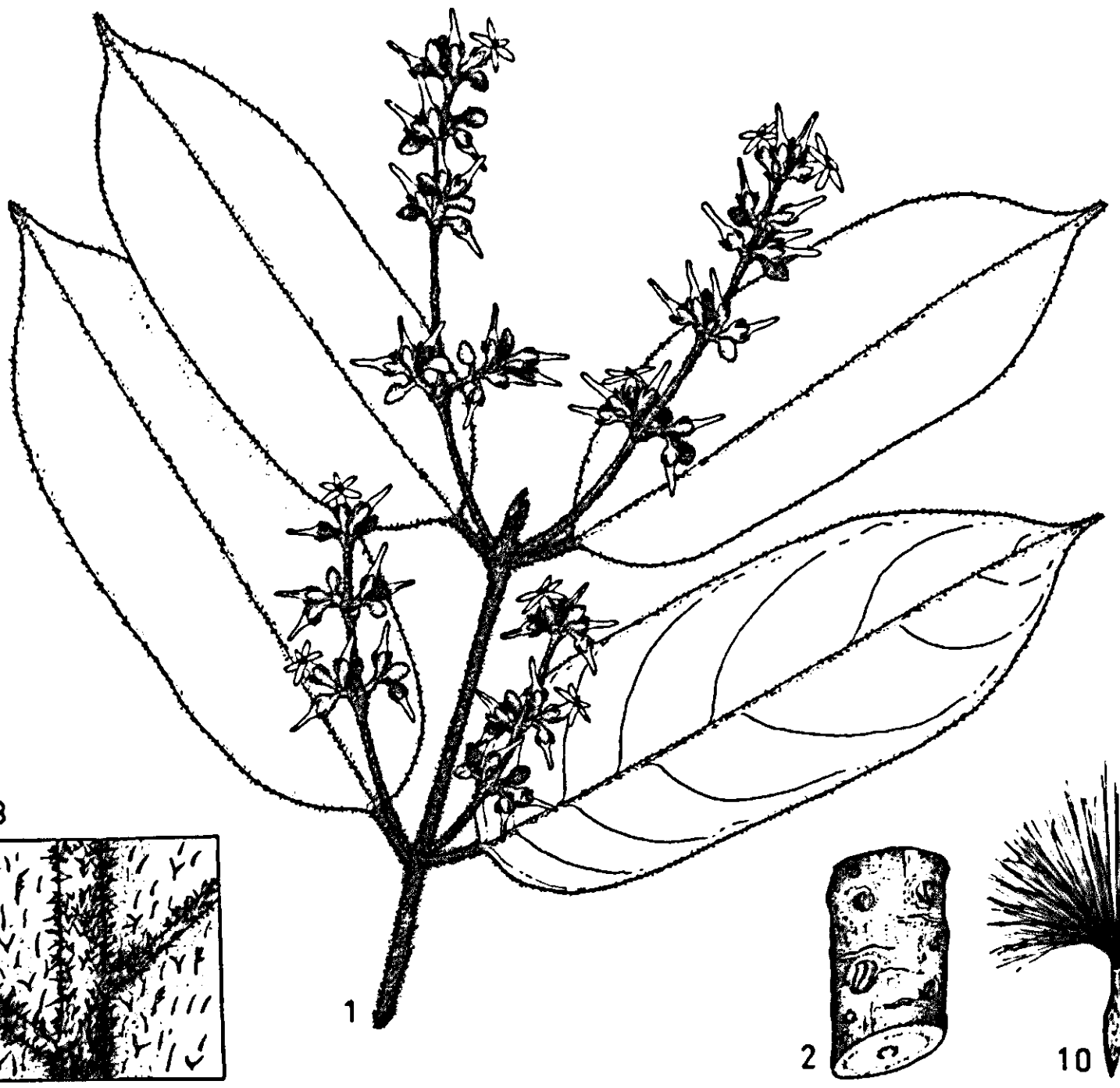












and Camilungo, Welwitsch 5956 p.p. April & May 1855 (P, holotype; isotypes: BM, BR, C, COI, G, K, MO).

Climbing *shrub* or *liana*, 3–25 m high climbing over shrubs and in trees. *Trunk* 1–6 cm in diameter; bark greyish-brown, more or less rough. *Branches* greyish-brown, sulcate, with many large pale brown lenticels; branchlets sulcate, densely reddish brown-pubescent. *Leaves*: petiole 4–12(–22) mm long, very densely covered with variously branched hairs, along the adaxial side with 1–15 up to 1 mm long triangular glands and near the base of the blade with 1–8, mostly only 2 triangular glands up to 1 mm long; blade elliptic to obovate, 1.8–3.1 × as long as wide, 4–13.4 × 2–6.8 cm, acuminate (or exceptionally emarginate) at the apex, rounded or cuneate at the base, sometimes undulate or recurved at the margin, papery, dark green above, medium to yellowish-green beneath, covered with variously branched hairs, most densely so along the veins and the margin; midrib pubescent; on each side 5–9 secondary veins; tertiary venation rather inconspicuous, reticulate; domatia absent or very inconspicuous, consisting of some short simple or variously branched hairs. *Inflorescence* 3.1–10.7 × 1–5.5 cm. Peduncles and branches with a very dense rusty brown tomentum. Pedicels 1–2.5 mm long, with a dense rusty brown tomentum. Bracts, and – if present – bracteoles, ovate to triangular, 1–1.4 × 0.2–0.6 mm, obtuse to acute at the apex, outside rusty brown-pubescent. *Sepals* rusty brown, ovate or broadly so, 0.9–2.6 × as long as wide, 1.2–2.6 × 0.7–1.9 mm, outside with a very dense rusty brown tomentum. *Corolla* in the mature bud 2–3 × as long as the calyx, 4.1–5.9 mm long; tube yellow to greenish-yellow, urceolate, widest in the middle, 1–1.6 × as long as the calyx, 2.7–3 mm long, 1.3–1.7 mm in diameter in the middle, 0.7–0.9 mm at the base and 1.1–1.3 mm at the apex; inside with tufts of hairs at 0.7–0.9 mm from the base; lobes yellow to greenish-yellow, ovate to triangular, 0.7–1.1 × as long as the tube, 1.9–3.1 × as long as wide, outside densely pubescent, often with glabrous patches, 2.3–2.8 × 0.8–1.2 mm; corona first yellow to greenish-yellow, often later turning white, 0.2–0.5 mm long, glabrous or only at the base puberulous. *Stamens* inserted at 0.6–0.8 mm from the base of the tube; filaments 0.2–0.3 mm long; anthers 8–10 × as long as the filaments, 1.7–2.1 mm long; tails 0.3–0.4 mm long; fertile portion 0.7–0.8 mm long. *Pistil* 1.9–2.5 mm long, carpels 0.7–1.1 × 0.3–0.6 × 0.2–0.4 mm, superior portion 0.4–0.6 mm long; disk: ring 0.1–0.3 mm high, lobes 0.1–0.3 × 0.1–0.3 mm, style 0.1–0.2 mm long; pistil head: upper portion 0.2–0.4 × 0.2–0.4 mm, lower portion 0.5–0.8 × 0.2–0.4 mm; appendices 0.2–0.5 mm long. Each placenta with 15–30 ovules. *Fruits* often subtended by the persistent calyx, narrowly cylindrical, shaping an angle of 150–250°, (12–)17–45 × as long as

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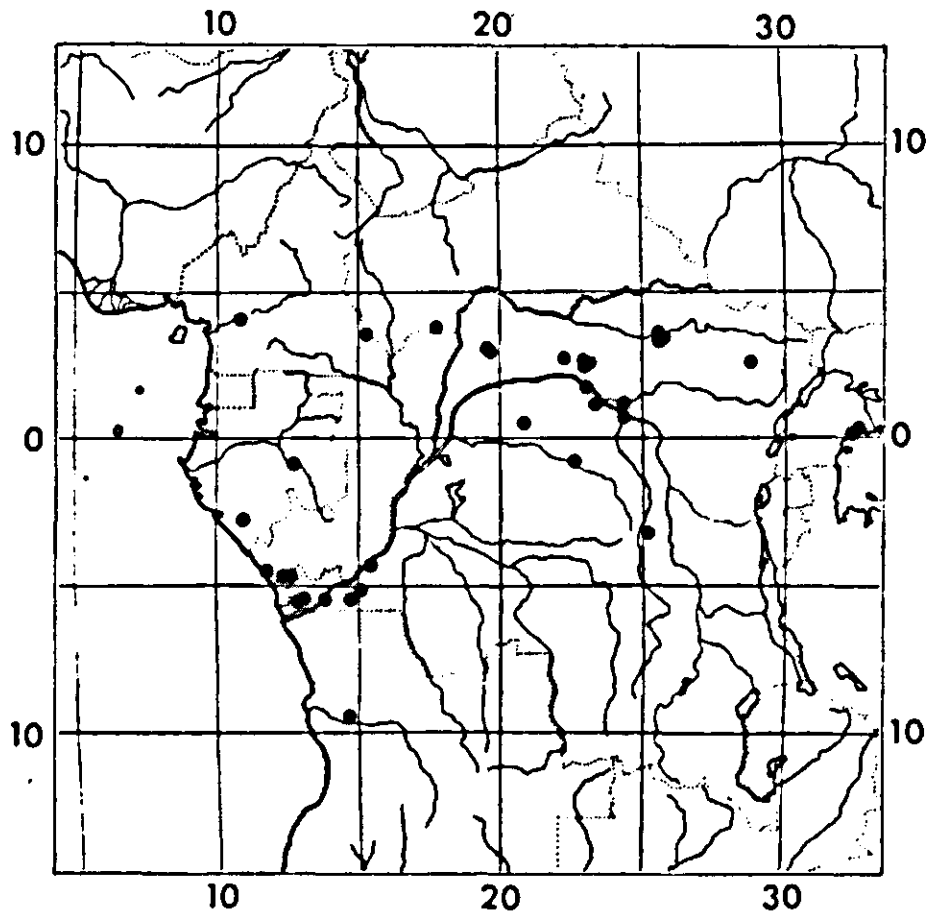
FIG. 3. *Oncinotis hirta* Oliver: 1. flowering branch, – ×; 2. part of branch, ⅔ ×; 3. midrib from beneath, 4 ×; 4. hairs of leaves, 25 ×; 5. leaf base with petiole from above, 4 ×; 6. flower, 6 ×; 7. opened flower showing 2 stamens and the pistil; the left stamen detached from the pistil; calyx, part of corolla, and 3 stamens removed, 12 ×; 8. stamen, adaxial side, 12 ×; 9. fruit, ⅔ ×; 10. seed, ⅔ ×. (1, 3–8. Gérard 5497; 2. Jespersen 29; 9–10. Gérard 2471).



MAP 3. *Oncinotis hirta* Oliver

wide, 6.3–24 × 0.4–1 × 0.4–1 cm; exocarp up to 1 mm thick, at the outer surface sulcate and covered with an up to 2.5 mm thick, deciduous, dense rusty brown or grey tomentum. *Seeds* up to 25 in each follicle; coma 21–45 mm long; grain 9.5–19 × 2–4 × 0.5–2 mm; testa smooth or minutely rugose; cotyledons 3.9–12.2 × 1.4–3.7 mm; rootlet 2.3–4.8 mm long.

Distribution: Central Africa.

Ecology: Mostly light or secondary deciduous forests or gallery forests; alt. 0–1200 m.

A selection of the about 80 specimens examined:

CAMEROUN: Mbanda, on Botmakak-Dibang road through Mangeunda II and Digombi (fr. Nov.) Charles A49 (P); 5 km E of Gribi (fl. May) Letouzey 5180 (P, WAG, YA).

CENTRAL AFRICAN REPUBLIC: Boukoko (fr. Nov.) Tisserant 2246 (BM, BR, LISC, P).

GABON: Lastoursville (fl. Nov.) Le Testu 7626 (BM, BR, P); ibid. (fl. May) Le Testu 7340 (BM, BR, LISC, P, WAG); Tchibanga (fl. Nov.) Le Testu 1255 (BM, BR, GH, K, P); ibid. (fl. Nov.) Le Testu 1470 (A, BM, E, EA, LISC, NY, P); ibid. (fl. Nov.) Le Testu 1857 (A, BM, BR, LISC, P).

CONGO(–Brazzaville): Loango near Makunga (= Makongo) (fl. Nov.) Soyaux 147 (BP, K, M, W); Linzola near Brazzaville (fl., fr. May) Koechlin 1119 (P).

ZAÏRE: Equateur: Boketa (fl., fr. Apr.) Evrard 632 (BR); Dundusana (fl. June) De Giorgi 1043 (BR); Befale (fr. Dec.) Evrard 3113 (BR, K); near Mondombe (fr. Nov.) Jespersen 29 (BR). Haut-Zaïre: near Mobwasa (fl. Dec.) Mortehan 759 (BR); Barumbu (buds, May) Goossens 2858 (BR); Esabo Isl. near Basoko (fl. June) Germain 4930 (BM, M, P, WAG); 25 km NE of Yambao (= Yambauw) (fl. June) Louis 15267 (BM, BR, EA, FI, K); Yangambi (fl. July) A. Léonard 1032 (BR, K, L, M, W); ibid., Mbutu Valley (fl., fr. Nov.) Louis 6805 (BR, EA, FI, K, NY, P, PRE, WAG); Batite (Zobia) fr. July) Gérard 4022 (BR, WAG); Bambesa (fl. Apr.) Gérard 5497 (BR, EA, WAG); Foki (fl. June) Claessens 1024 (BR). Kivu: between and Katako Kombe (Maniema) (fl. Aug.) Lebrun 6066 (BR, EA, WAG). Bas-Zaïre: Luki (fl. Dec.) Toussaint 86 (BR, EA, WAG); Songololo Terr. (fl. Nov.) Compère 925 (BR, K); M'Vuazi, Kolo Forest (fl. Sept.) Devred 773

(BR, K); Kisantu (fr. June) Gillet 2216 (BR). Kinshasa: Mabana, Maluku Terr. (fl. Nov.) Breyne 992 (BR).

UGANDA: Kitabe (= Katibi) near Entebbe (fl., imm. fr. June–July) Chandler 1270 (BR, EA, K); Kipayo Forest (fl., fr. Dec.) Dümmer 1392 (BM, K, P, US).

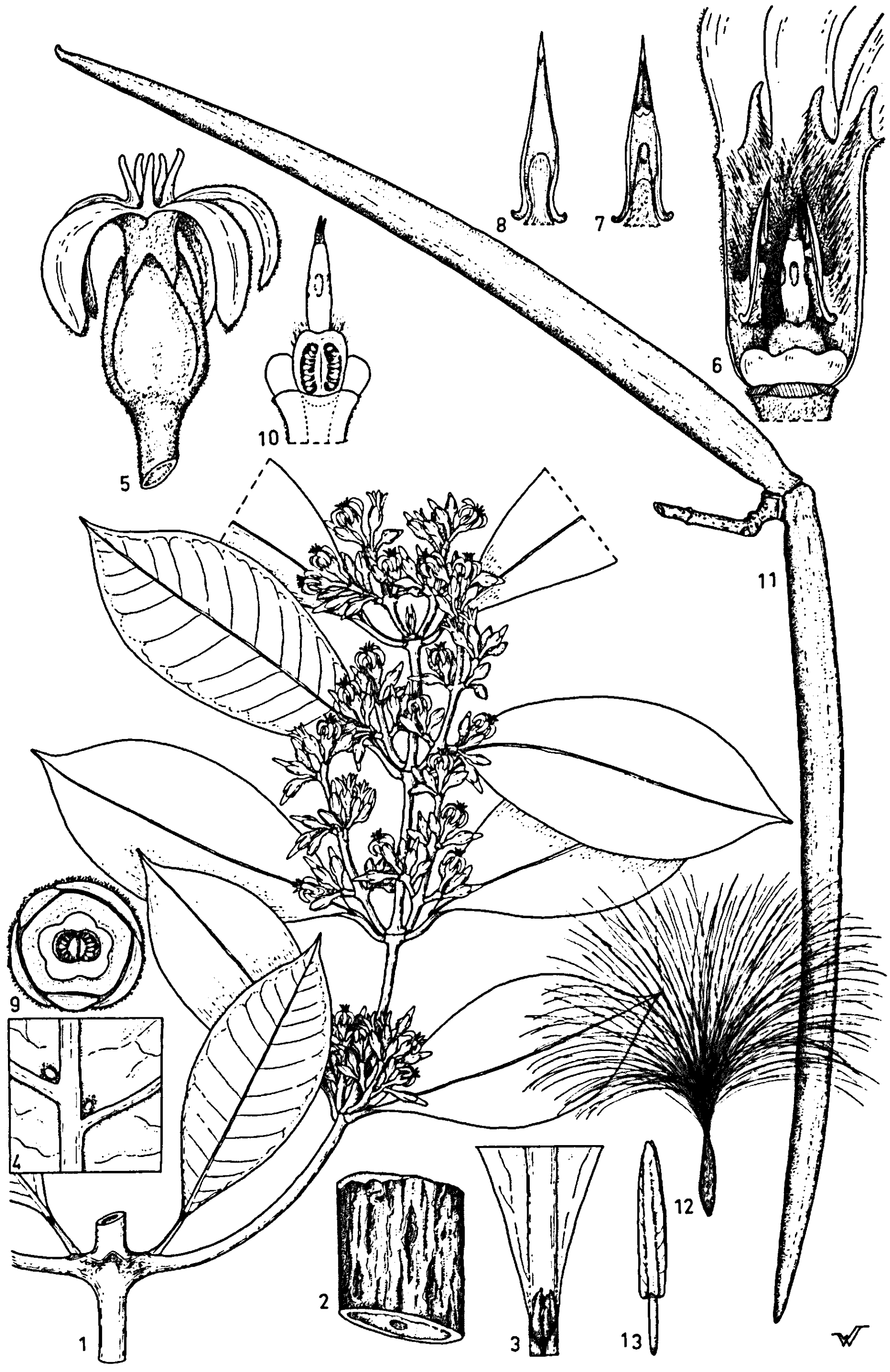
ANGOLA: Cabinda: Buco Zau (fr. Aug.) Gossweiler 6551 (BM, COI, LISJC, LISU); along Chiluango R. (= Chiloango R.) (fr. May) Gossweiler 8040 (BM, COI, K, LISU). Cuanza Norte: Golungo Alto, between Luiz Simôes and Camilungo (fl. Apr.–May) Welwitsch 5956 p.p. (BM, BR, C, COI, G, K, MO, P); Golungo Alto, Quilombo Mts. (imm. fr. Dec.) Welwitsch 5956 p.p. (BM, LISU); Golungo Alto, Granja de Sao Luiz (fl. Dec.) Gossweiler 4445 (BM, BR, COI, K); ibid. (fl. Dec.) Gossweiler 4782 (BM, BR, C, COI, K, S).

Note: *O. gracilis* and *O. hirta* may be confused, see note under *O. gracilis*.

4. Oncinotis nitida Benth. 1849: 451–452; Walpers 1852–1853: 44: Schumann 1895b: 179; Stapf 1902: 221; 1904: 612; Hutchinson & Dalziel 1931: 49; Pichon 1954: 17–19; 13, pl. I, E-F; 17, fig. 1; Irvine 1961: 629; Huber 1963: 80; Berhaut 1971: 410–411. **Fig. 4; Map 4**

Type: Sierra Leone: sin. loc., Vogel 63 (K, holotype).

Liana, 0.5–20 m high climbing over shrubs and in trees. *Trunk* 0.5–3.5 cm in diameter. *Branches* greyish-brown, first smooth, later longitudinally fissured and with large orange-brown lenticels; inner bark grey to pale brown, with many rope-like fine fibres; wood creamy; branchlets pale brown to greenish-brown, smooth to faintly sulcate with orange-brown lenticels, glabrous (or exceptionally sparsely pubescent). *Leaves*: petiole 4–16 mm long, glabrous (or exceptionally sparsely pubescent), along the adaxial side with 1–3 clusters of 2–6 triangular, up to 1 mm long glands, one of which usually near the base of the blade; blade elliptic to obovate or less often narrowly so, 1.4–3.6 × as long as wide, 3.3–11.5 × 1.4–5.6 cm, acuminate (or exceptionally emarginate) at the apex, cuneate at the base, papery, glabrous, dark to medium green above, paler beneath, glossy; midrib pale brown above, medium to reddish-brown beneath, glabrous (or exceptionally sparsely pubescent); on each side 13–25 secondary veins, often reddish-brown beneath; tertiary venation rather conspicuous, scalariform; domatia sometimes absent, usually consisting of pits without a ciliate margin. *Inflorescence* 2.5–10.5 × 1–6 cm. Peduncle glabrous or puberulous, glabrescent; branches rusty brown-pubescent, glabrescent. Bracts, and – if present – bracteoles, triangular to ovate, 1.6–2.2 × 0.6–1.2 mm, subacute at the apex, outside rusty brown-pubescent, inside at the base sometimes with 1–2 colleters, elliptic to ovate or narrowly so. *Sepals* yellowish-green, ovate to triangular, often broadly so, 1.1–2.7 × as long as wide, 2.1–3.8 × 1.2–2.5 mm, outside rusty brown-pubescent, often with glabrous patches, inside at the base 0–3 colleters per sepal, situated at the margin; colleters elliptic to ovate, or narrowly so. *Corolla* in the mature bud 1.9–3.9 × as long as the calyx, 5.8–9 mm long; tube yellow to pale yellow, almost broadly cylindrical, widening somewhat towards the middle, 0.7–1.7 × as long as the calyx, 2.9–4.3 mm long, 1.4–2.1 mm in diameter; with tufts of hairs inside at 0.6–1.2 mm from the base; lobes yellow to pale yellow, ovate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to triangular, or narrowly so, 0.7–1.1 × as long as the tube, 2.2–4.1 × as long as wide, outside glabrous or puberulous, often with glabrous patches, 2.1–5.2 × 1.2–2.1 mm; corona white to pale yellow, 1–1.6 mm long, at the base pubescent to pilose. *Stamens* inserted at 0.7–1 mm from the base of the tube; filaments 0.2–0.3 mm long; anthers 7–11 × as long as the filaments, 2.1–2.3 mm long, tails 0.3–0.5 mm long; fertile portion 0.9–1.2 mm long. *Pistil* 2.5–3.2 mm long; carpels 0.9–1.4 × 0.4–0.8 × 0.2–0.5 mm, superior portion 0.7–0.9 mm long; disk: ring 0.1–0.6 mm high, lobes 0.1–0.7 × 0.3–0.7 mm; style 0.2–0.4 mm long; pistil head: upper portion: 0.2–0.5 × 0.2–0.4 mm, lower portion 0.5–0.7 × 0.2–0.4 mm; appendices 0.4–0.5 mm long. Each placenta with 35–60 ovules. *Fruits* often subtended by the persistent calyx; follicles narrowly cylindrical, making an angle of 130–160°, 21–28 × as long as wide, 12–28 × 0.6–1 × 0.6–1 cm; exocarp up to 1 mm thick, at the outer surface smooth and glabrous. *Seeds* up to 40 in each follicle; coma 30–60 mm long; grain 8–21 × 2–45 × 0.5–2 mm; testa rugose or only minutely so; cotyledons 5.8–12.3 × 1.8–3.2 mm; rootlet 2.3–4.6 mm long.

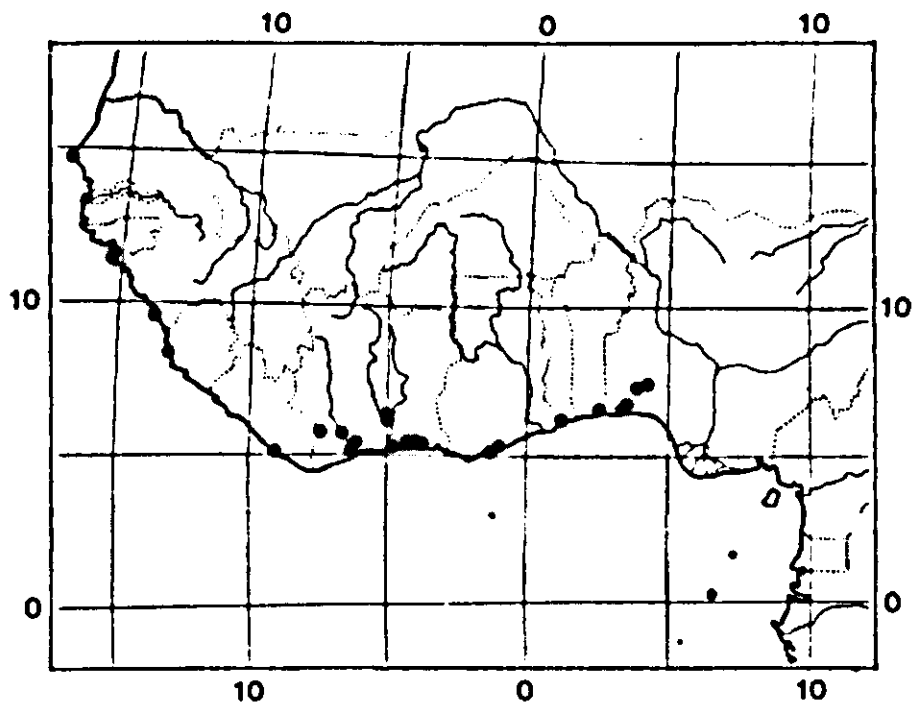
Distribution: West Africa from Senegal to Western Nigeria.

Ecology: Riverine forests and secondary forests, especially on riverbanks, on sand and clay; alt. 0–100 m.

A selection of the ca 50 specimens examined:

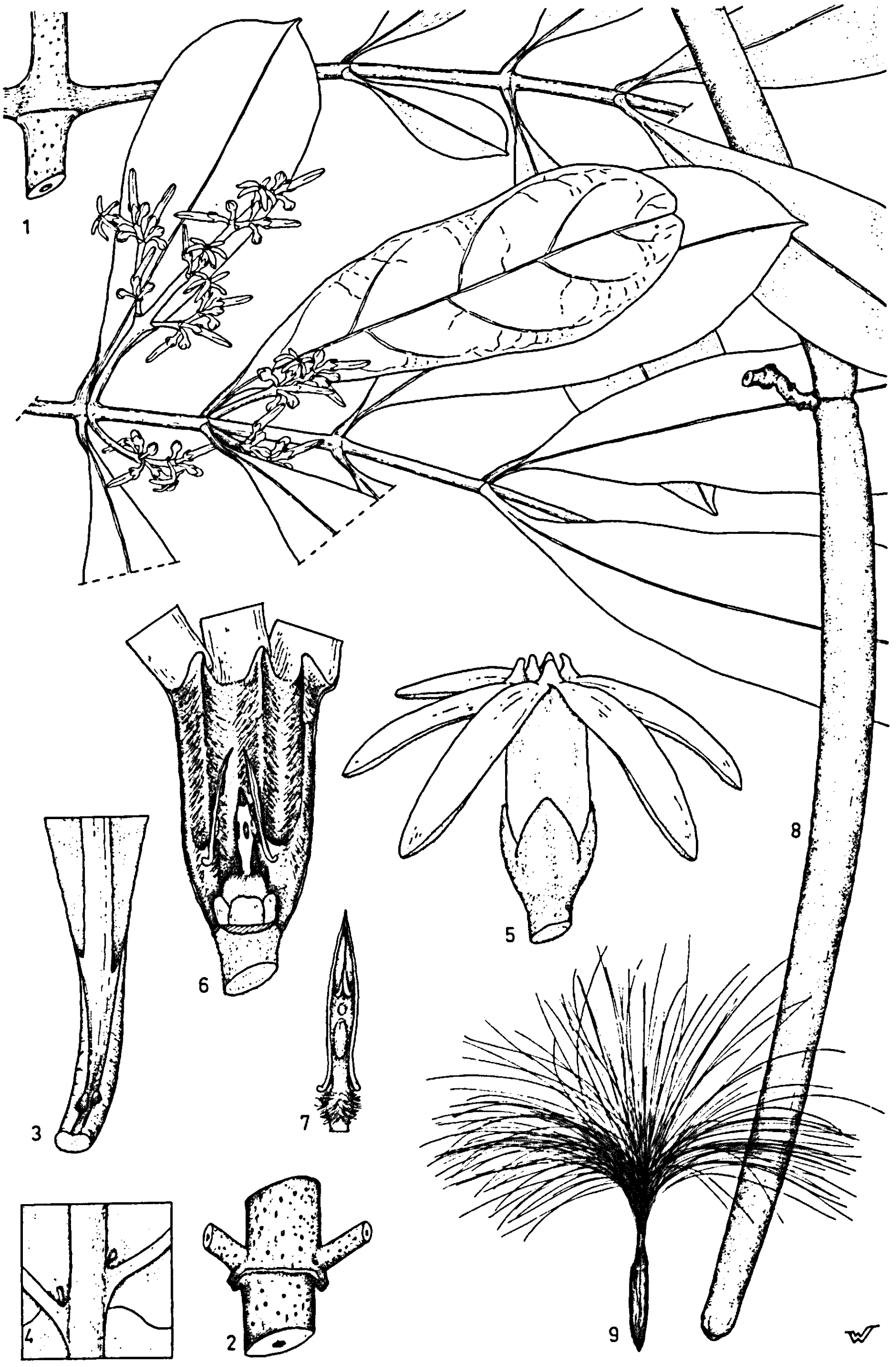
SENEGAL: Sangelkam (fl. Sept.) Berhaut 5406 (P).

GUINEA-BISSAU: Empada (fr. Dec.) Espírito Santo 2337 (COI, K, LISC, MO, WAG); Catio (fl. Aug.) Espírito Santo 2174 (BR, COI, K, LISC, LISJC, MO, P, WAG).



MAP 4. *Oncinotis nitida* Benth.

FIG. 4. *Oncinotis nitida* Benth.: 1. flowering beneath, ⅔ ×; 2. part of branch, ⅔ ×; 3. leaf base with petiole from above, 8 ×; 4. domatia, 4 ×; 5. flower, 6 ×; 6. opened flower showing 2 stamens and the pistil; the left stamen detached from the pistil; calyx, part of corolla, and 3 stamens removed, 8 ×; 7. stamen, adaxial side, 12 ×; 8. stamen, adaxial side, 12 ×; 9. transverse section of ovary, 6 ×; 10. pistil with longitudinal section of ovary, 8 ×; 11. fruit, ⅔ ×; 12. seed, ⅔ ×; 13. embryo 2 ×. (1, 3–10. De Kruif 701; 2, 11. De Kruif 697; 12. J. B. Hall 2171).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GUINEA(-Conakry): Conakry (imm. fr. Dec.) Maclaud 176 (P).
SIERRA LEONE: Waterloo (fl. July) Lane-Poole 300 (K, MO); sin. loc. (fl. June) Vogel 63 (K, type).
LIBERIA: Greenville, Sinoe County (fr.) Sim anno 1904 (K).
IVORY COAST: between Tai and left bank Cavally R. (Nov.) De Kruif 719 (UCJ, WAG); 9 km W of Soubré, along road to Niamagui (fr. May) Leeuwenberg 12140 (WAG); Soubré (fl. June) Chevalier 19128 (P); 2 km W of Béyo (km 56 road Sassandra-Gagnoa), right bank Davo R. (fl., fr. Nov.) De Kruif 697 (UCJ, WAG); km 17 road Sassandra-Gagnoa, left bank Davo R. (imm. fr. Nov.) De Kruif 700 & 701 (UCJ, WAG); km 15 road Sassandra-Gagnoa, left border Sassandra R. (imm. fr. Nov.) De Kruif 698 (UCJ, WAG); 50 km W of Dabou, along road to Grand-Lahou (fl. July) Versteegh & Den Outer 564 (U, WAG); Banco Forest (Oct.) De Kruif 662 (UCJ, WAG); bank of Comoe R., opposite Grand Bassam (fl. July) W. J. J. O. de Wilde 479 (BR, EA, K, P, PRE, WAG, Z).
GHANA: Dabere near Elmina (fr. Jan.) Hall 2172 (K); Asafo road junction on Cape Coast road (fl. Oct.) Morton GC 7823 (K, WAG).
TOGO: near Lomé (fl.) Warnecke 450 (BM, BR, E, EA, G, K, L, M).
BENIN REPUBLIC: Porto-Novo (fr. Jan.) Chevalier 22804 (P, WAG).
NIGERIA: Oyo State: Ibadan (fr. Oct.) Baldwin 13677 (K, MO, WAG); Babalolo (fr. Feb.) Verger 804 (P). Lagos State: Lagos (fl. June) Dalziel 1347 (C, E, K, MO, PRE).

Note: Especially the specimens collected by Berhaut in Sangelkam in Senegal are hairy.

5. Oncinotis pontyi Dubard 1911: 201–202; 1912: 514–515; Pichon 1954: 26–28.
Fig. 5; Map 5; Phot. 1

Type: Ghana: Amnafo, Giraud s.n. (P, holotype).
Heterotypic synonyms: *O. obovata* De Wild. 1915: 103; 1920: 22–23. Type: Zaïre: Kasai: Sankuru Forest, *Luja s.n.* March 1907 (BR, lectotype; isotype, G).
O. pontyi var. *breviloba* Pichon 1954: 28; 29, pl. II, D-E; 17, fig. 1. Type: Zaïre: Haut-Zaïre: km 14 road Yangambi-Weko, Louis 16055 (P, lectotype; isotypes: BR, C, K).

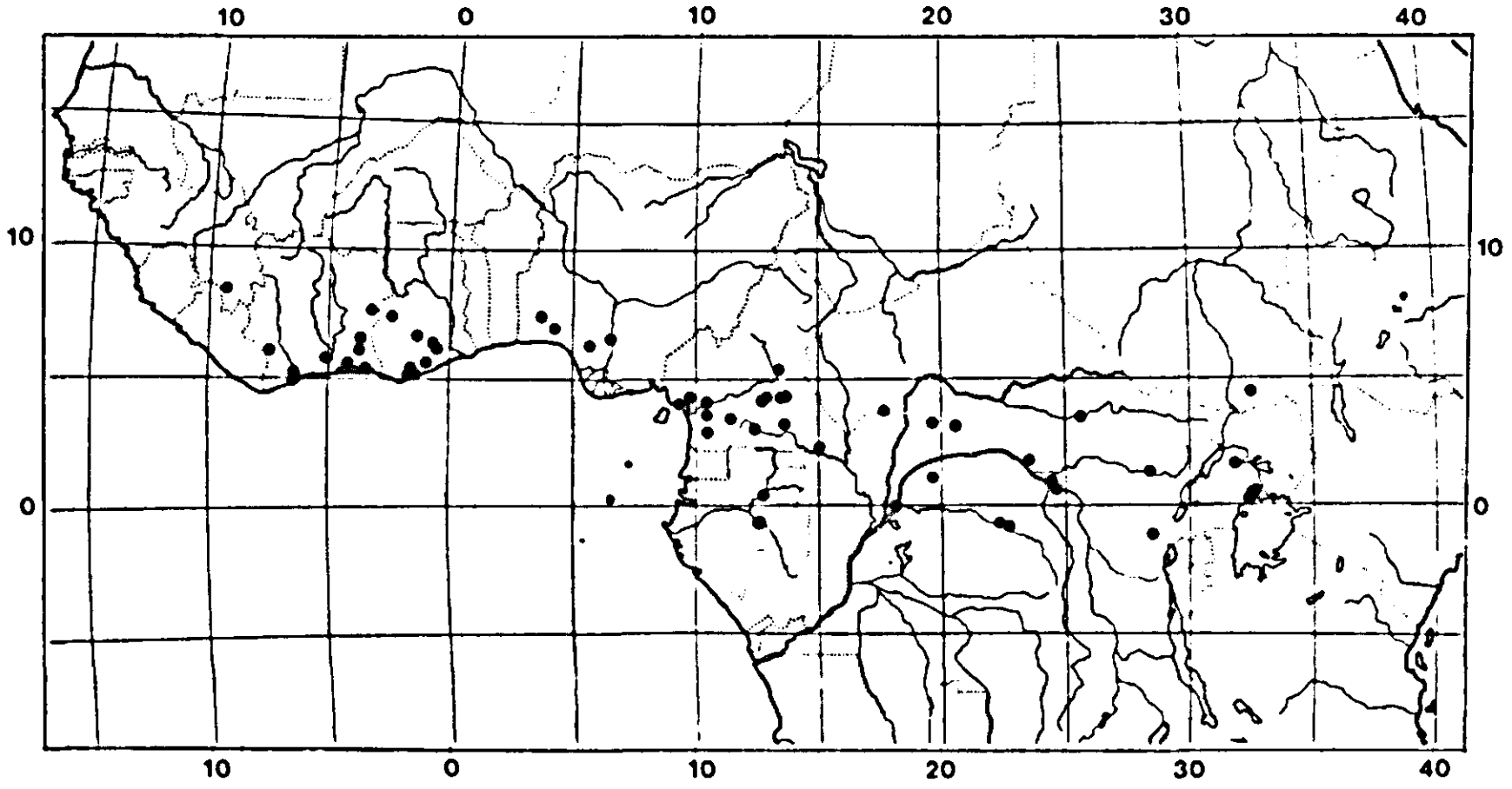
Liana, 5–50 m high climbing in trees. *Trunk* 1–15 cm in diameter. Branches greyish- to black-brown, at first smooth, later corrugated and with many orange- to grey-brown lenticels; inner bark grey to pale brown, with many rope-like fine fibres; wood pale yellow; branchlets brownish-grey to pale grey, smooth to faintly sulcate, with many orange- to grey-brown lenticels, glabrous or sparsely pubescent. *Leaves*: petiole 7–22 mm long, glabrous or rarely slightly pubescent, glabrescent, along the adaxial side with up to 1 mm long triangular glands, often 1–3 pairs; blade obovate or – less often – broadly or narrowly so, 1.5–3(–4.1) × as long as wide, 4–18.1 × 1.4–10.1 cm, acuminate or often emarginate at the apex, cuneate at the base, sometimes undulate or recurved at the margin,

FIG. 5. *Oncinotis pontyi* Dubard: 1. flowering branch, ⅔ ×; 2. part of branch, ⅔ ×; 3. leaf base with petiole from above, 4 ×; 4. domatia, 4 ×; 5. flower, 6 ×; 6. opened flower showing 2 stamens and the pistil; the left stamen detached from the pistil, 8 ×; 7. stamen, adaxial side, 12 ×; 8. fruit, ⅔ ×; 9. seed, ⅔ ×. (1. Leeuwenberg 10636; 2–4. De Kruif 666; 5–7. De Kruif 723; 8. De Kruif 684; 9. Gérard 5298).

PHOT. 1. *Oncinotis pontyi* Dubard (De Kruif 684, phot. Leeuwenberg).

subcoriaceous or coriaceous, glabrous or rarely puberulous on the midrib, dark to medium green and glossy above, dull and distinctly paler beneath; on each side 3–10 secondary veins; tertiary venation inconspicuous; domatia sometimes absent, usually consisting of pits with a ciliate margin. *Inflorescences* 3–11.5 × 1.5–8.5 cm. Peduncle and branches rusty brown-pubescent. Pedicels 2–3.5 mm long, rusty brown-puberulous. Bracts, and – if present – bracteoles, ovate to triangular, 0.6–1.6 × 0.2–0.8 mm, acute at the apex, outside rusty brown-pubescent or -puberulous. *Sepals* brownish-green, broadly ovate to broadly triangular, 1–2 × as long as wide, 0.8–2.1 × 0.6–1.2 mm, outside rusty brown-puberulous. *Corolla* in the mature and 5–8.8 × as long as the calyx, 4.5–9.8 mm long; tube yellowish- or whitish-green, cylindrical, somewhat narrowing towards the base and the apex, 1.6–3.1 × as long as the calyx, 2.2–3.8 mm long, 1.4–2 mm in diameter; with tufts of hairs inside at 0.7–1.1 mm from the base, lobes yellowish- or whitish-green, narrowly ovate, 0.8–1.7 × as long as the tube, 1.5–4.7 × as long as wide, 1.7–5.8 × 1–1.7 mm, outside puberulous or glabrous; corona yellowish- or whitish-green, later turning white, 0.4–0.8 mm long, pubescent at the base or glabrous. *Stamens* inserted at 0.6–1 mm from the base of the tube; filaments 0.2–0.3 mm long; anthers 6–11 × as long as the filaments, 1.8–2.1 mm long; tails 0.2–0.3 mm long; fertile portion 0.7–1.2 mm long. *Pistil* 2–2.8 mm long; carpels 0.8–1.2 × 0.4–0.6 × 0.2–0.4 mm, superior portion 0.6–1 mm long; disk: ring 0.1–0.3 mm high, lobes 0.1–0.3 × 0.1–0.3 mm; style 0.1–0.2 mm long; pistil head: upper portion 0.2–0.4 × 0.2–0.4 mm,

lower portion 0.5–0.9 × 0.2–0.5 mm; appendices 0.2–0.5 mm long. Each placenta with 30–50 ovules. *Fruits*: follicles narrowly cylindrical, often faintly recurved or upcurved, making an angle of 140–220°, 16–40 × as long as wide, 12–28.5 × 0.4–2.6 × 0.4–2.6 cm; exocarp up to 2 mm thick, mostly very hard, at the outer surface slightly sulcate, greyish- to rusty brown-pubescent, glabrescent. Seeds up to 40 in each follicle; coma 45–93 mm long; grain 16–27 × 3–5.8 mm; testa rugose, often only narrowly so; cotyledons 12–24 × 2.5–5.6 mm; rootlet 4.3–5.5 mm long.



MAP 5. *Oncinotis pontyi* Dubard

Distribution: Tropical Africa from Ivory Coast to Uganda.

Ecology: Rain forests, swamp forests, secondary deciduous forests and gallery forests; alt. 0–1200 m.

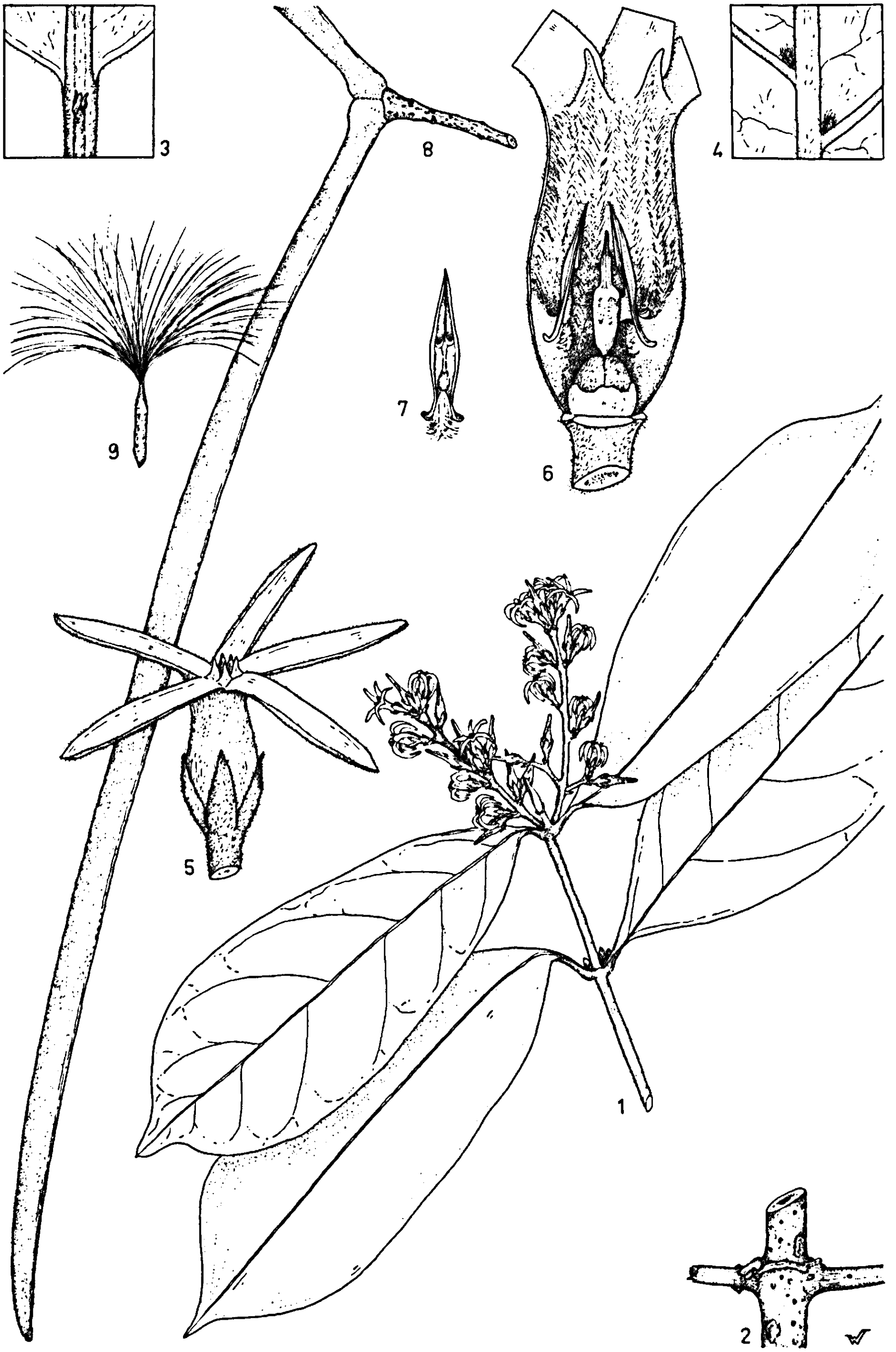
A selection of the ca 100 specimens examined:

GUINEA(–Conakry): 5 km S of Macenta (fl. Mar.) Lisowski 55185 (BR).

IVORY COAST: km 30 road Tai-Guiglo (fl., fr. Nov.) De Kruif 723 (UCJ, WAG); km 24 road Sassandra-Monogaga (imm. fr. Nov.) De Kruif 696 (UCJ, WAG); 2 km S of Adzopé (Dec.) Leeuwenberg 10728 (WAG); km 13 road Divo-Tassalé (fl. Oct.) De Kruif 666 (UCJ, WAG); Bouroukrou (fr. Dec.–Jan.) Chevalier 16531 (P); km 22 road Abengourou-Akoupé, about 3 km N of Aniassué (imm. fr. Oct.) De Kruif 684 (UCJ, WAG); Adiopodoumé (fr. Aug.) Versteegh & Den Outer 757 (BR, U, WAG); road Abidjan-Aboisso, 47 km after Comoe-bridge (fl., fr. Nov.) Breteler 5914 (WAG).

GHANA: Sunyani, Asukese For. Res. (imm. fr. Apr.) Enti FE 1407 (MO); Bobiri For. Res., E of Kumasi, NE of Kubeasi (fr. Feb.) Leeuwenberg 11968 (WAG); Subri R. For. Res. (fl. Oct.) Hall & Abbiw GC 44578 (K, MO, WAG); Esen Epam For. Res., Oda road (fr. Nov.) Enti Sp 424 (BR, K, MO); Atewa Range For. Res. (fr. June) Hall & Lock 46758 (K, MO, WAG); Amnafo (fl.) Giraud Apr. 1910 (P, type).

NIGERIA: Oyo State: Ibadan (Feb.) Foster 158 (K). Ogun State: near Oloji (June) Gentry & Pilz 32745 (MO); ibid. (June) Gentry & Pilz 32746 (MO). Bendel State: Benin City, Unwin 15152 (P); Ogodo (= Ogo), Asaba Distr., Unwin recd. 5 May 1906 (K).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CAMEROUN: Victoria (fr. Dec.) Maitland 909 (K); near Tiko (fr. Nov.) Krukoff 71 (MO); SW of Kompina (fl. Nov.) Leeuwenberg 10636 (WAG); 8 km W of Masok (fl., fr. Mar.) Leeuwenberg 5199 (BR, C, EA, K, LISC, P, WAG, YA); Bipindi (fr.) Zenker s.n. (F); M'Balmayo (fl. Dec.) De Wit 9417 (WAG); near Zendé, 10 km SE of Nguélémendouka (Nov.) Breteler 2091 (P, WAG, YA); Bitye (fl. Nov.) Bates 1502 (BM, MO, NY, Z); km 125 road Yaoundé-Dengdeng, near confluence of Lom (Sanaga) R. and Djerem R. (fr., imm. fr. Feb.) Mildbraed 8293 (K); 8 km N of Lomié, near Mintoum, km 119 road Abong Mbang-Lomié (Dec.) De Kruif 911 (WAG, YA); 15 km E of Dimako, halfway Bertoua-Doumé (fl. June) Leeuwenberg 5827 (BR, C, EA, K, LISC, P, PRE, WAG, YA); about 30 km NW of Moloundou (buds, imm. fr. Dec.) De Kruif 882 (WAG, YA).

CENTRAL AFRICAN REPUBLIC: Lobaye Forest (fr. June) Barbier 585 (MPU); Boukoko (fl. Oct.) Tisserant 376 (BM, BR, P); ibid. (fl., fr. Nov.) Tisserant 457 (BM, BR, P); ibid. (fl. Dec.) Tisserant 2328 (BM, BR, LISC, P, WAG).

GABON: M'Passa Field Station, near Makokou along the Ivindo R. (fr. July) Gentry 33123 (MO); near Lastoursville (fl. May) Le Testu 7350 (BM, BR, LISC, MO, P, WAG).

ZAÏRE: Equateur: Eala (fr. May) M. D. J. Laurent 888 (BR); Basankusu-Bokakata road (fl. Sept.) Evrard 4807 (BR, EA, K); Libenge-moke (Gemena) (fr.) Evrard 1354 (BR); Bongangatua (Bongabo) (fl., fr. June) Evrard 1144 (BR); near Mondombe (fr.) Jespersen Nov. 1907 (BR, paratype of *O. obovata*). Haut-Zaïre: Yahila (Bamboli), left bank of Zaïre R. (fl. Sept.); Louis 11210 (BR, FI, K); km 14 road Yangambi-Weko (fl., fr. Sept.) Louis 16055 (BR, C, K, P, type of *O. pontyi* var. *breviloba*); Bambesa (fr. Aug.) Gérard 5298 (BR, WAG); Epulu, near Mambasa (fl. Dec.) Hart 350 (BR, K). Kasai: Sankuru Forest (fl., fr.) Luja Mar. 1907 (BR, G, lectotype of *O. obovata*). Kivu: near Kaseke, km 50 road Loashi-Mutongo, Walikale Terr. (imm. fr. Mar.) Pierlot 1775 (BR).

SUDAN: Lotti Forest, Torit Distr. (buds, fr. June) Andrews 1732 (FI, K, NY).

UGANDA: Budongo Forest (fl., fr. June) Eggeling 3035 (BR, K, P); Mulange, Mabira For. Res. (buds, fr. Nov.) Dümmer 4348 (BM, K, P, US).

Note: Although in Central Africa *O. pontyi* and *O. glabrata* closely resemble each other the two species can always be clearly distinguished as is shown in the key. The present author does not maintain var. breviloba as it grades into the type variety.

6. Oncinotis tenuiloba Stapf 1898: 307; De Wildeman & T. Durand 1899: 41; 1901a: 131, pl. 76; 1901b: 156; Stapf 1902: 222–223; Pichon 1954: 22–24; 21, fig. 2. **Fig. 6; Map 6**

Type: Zaïre: Equateur: near Lukasa (= Likasa), Dewèvre 883 (BR, holotype).

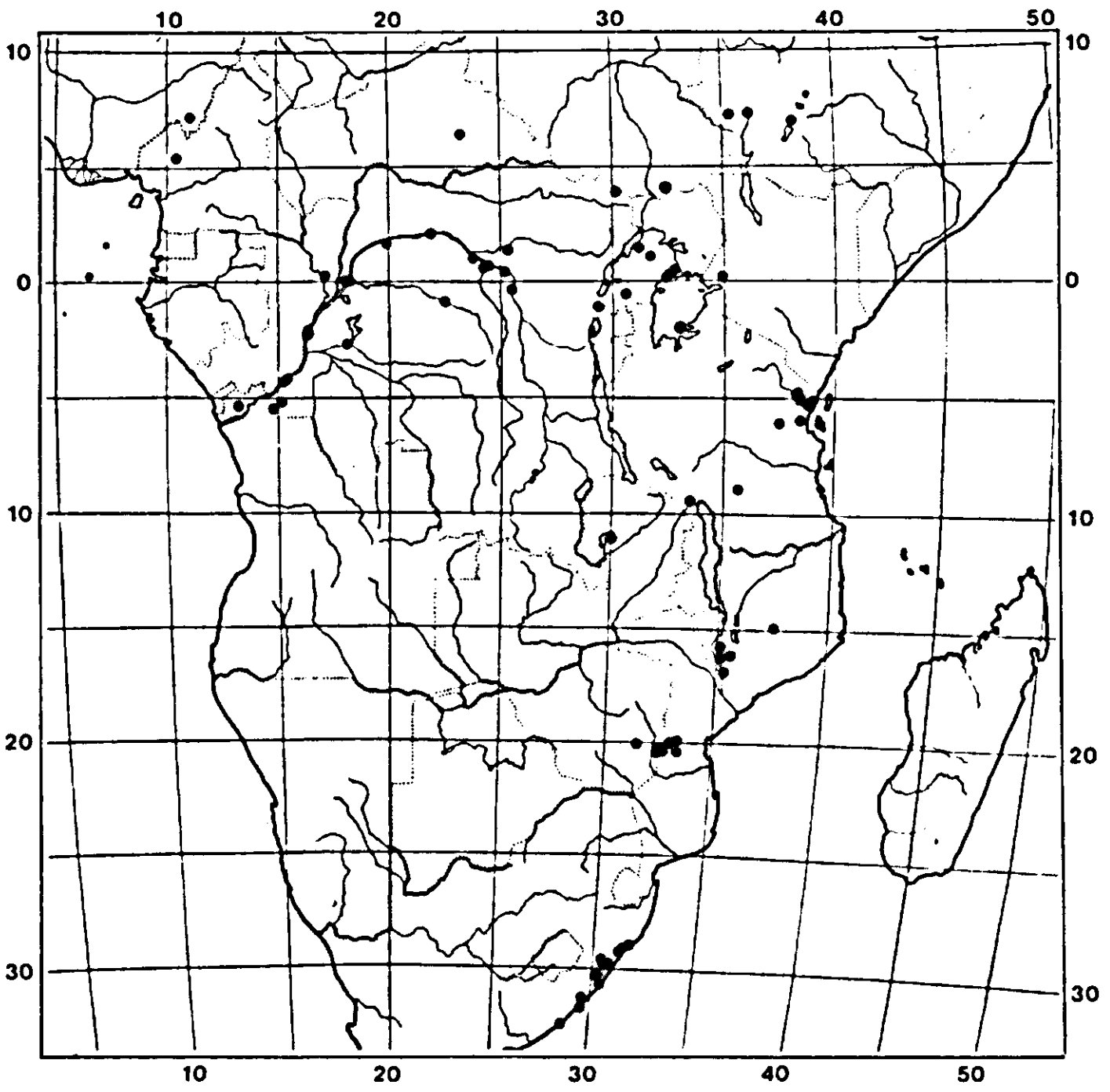
Heterotypic synonyms: *O. inandensis* J. M. Wood & M. Evans 1899a: 254; 1899b: 50–51, pl. 61; Stapf 1907b: 512; Pichon 1954: 24–26; 29, pl. II, A; 21, fig. 2; Codd 1963: 288–289; Palmer & Pitman 1972: 1927–1928; Coates Palgraves 1977: 796. Type: South Africa: Natal: Inanda, Wood 1009 (K, lectotype; isotypes: BM, MO, P). Homotypic synonym: *O. natalensis* Stapf 1907a: 52.

Motandra erlangeri Schumann 1903: 318; Stapf 1904: 613. Type: Ethiopia: Arusi: near Lake Awasa, Ellenbeck 1710 (holotype not seen, destroyed in B; lectotype: K).

FIG. 6. *Oncinotis tenuiloba* Stapf: 1. flowering branch, $\frac{1}{3}\times$; 2. part of branch, $\frac{1}{3}\times$; 3. leaf base with petiole from above, 4 ×; 4. domatia, 4 ×; 5. flower, 4 ×; 6. opened flower showing 2 stamens and the pistil; the left stamen detached from the pistil, 8 ×; 7. stamen, adaxial side, 8 ×; 8. fruit, $\frac{2}{3}\times$; 9. seed, $\frac{2}{3}\times$. (1, 3–7. Brenan & Greenway 8103; 2. G. R. Williams 576; 8. Drummond 10187; 9. Wild 2175).

O. chirindica S. Moore 1911: 141–142. Type: Zimbabwe: Chirinda Forest, Swynnerton 87 (BM, holotype; isotypes: K, SRGH, Z; photograph: MO).

Climbing *shrub* or *liana*, 1.8–30 m high climbing over shrubs and in trees. *Trunk* up to 2 cm in diameter or more; bark light ochraceous, thick corky; inner bark with rope-like fibres. Wood creamy. Branches pale to dark brown, slightly sulcate, with many whitish lenticels; branchlets brownish- to greyish-green, slightly sulcate, puberulous or pubescent, rarely densely so. *Leaves*: petiole 5–12 mm long, puberulous or pubescent, rarely densely so, with 2 pairs of oblong to triangular glands along the adaxial side, up to about 1 mm long, usually 1 pair near the proximal end of the midrib; blade obovate or narrowly so, 2–4.1 × as long as wide, (1.8–)4.6–14.2 × 1.2–5.2 cm, acuminate or rarely emarginate at the apex, cuneate at the base, membranaceous to papery, glabrous, or rarely pubescent, dark to medium green above, slightly paler beneath, slightly glossy; midrib glabrous, puberulous, or rarely densely pubescent; on each side 2–7 secondary veins, often purplish, glabrous, puberulous or rarely densely pubescent; tertiary venation rather conspicuous, scalariform; domatia consisting of pits with a dense tuft of hispid hairs along the margin. *Inflorescence* 2.5–6.5 × 2–4 cm. Peduncle and branches rusty brown-pubescent. Pedicels 1.2–4 mm long, densely rusty brown-pubescent. Bracts, and – if present – bracteoles, narrowly triangular, 0.8–3.1 × 0.2–1 mm, acute at the apex, rusty brown-pubescent outside. *Sepals* olive green, elliptic to triangular, or narrowly or broadly so, 1–3.1 × as long as wide, 1.2–3.2 × 0.8–1.5 mm, outside rusty brown-pubescent or -puberulous. *Corolla* pale yellowish-green, in the mature bud 3.2–6 × as long as the calyx, 6.8–12.1 mm long; tube 1.1–2.4 × as long as the calyx, 2.5–3.8 mm long, barrel-shaped, widest at or slightly below the middle and there 1.4–2.1 mm in diameter, at the apex and base 0.6–1.1 mm; inside with tufts of hairs at 0.5–1 mm from the base; lobes 1.3–1.9 × as long as the tube, 3.5–6.5 × as long as wide, 4.2–7.3 × 0.7–1.5 mm, outside puberulous or glabrous; corona 0.4–1 mm long. *Stamens* inserted at 0.5–1 mm from the base of the tube; filaments 0.2–0.3 mm long; anthers 7.5–14 × as long as the filaments, 2–2.8 mm long; tails 0.3–0.4 mm long; fertile portion 1.2–1.4 mm long. *Pistil* 2.8–3.3 mm long; carpels 0.8–1.4 × 0.5–0.9 × 0.1–0.3 mm, superior portion 0.5–0.9 mm long; disk: ring 0.1–0.4 mm high, lobes 0.1–0.4 × 0.2–0.4 mm; style 0.1–0.3 mm long; pistil head: upper portion 0.2–0.5 × 0.2–0.4 mm, lower portion 0.7–1.1 × 0.2–0.4 mm; appendices 0.2–0.5 mm long. Each placenta with 15–45 ovules. *Fruits*: follicles pendulous, narrowly cylindrical, tapering at both ends, making an angle of 40–180°, 9–48 × as long as wide, 10.5–30 × 0.4–1.3 × 0.4–1.3 cm; exocarp up to 1 mm thick, at the outer surface slightly sulcate, sometimes with orange-brown lenticels, greyish- to dark brown-pubescent. *Seeds* up to 35 in each follicle; coma 22–58 mm long; grain 12–22.6 × 2–6.1 × 0.5–3.6 mm; testa rugose; cotyledons 3.7–12.8 × 1.2–5.4 mm; rootlet 4.1–5.8 mm long.



MAP 6. *Oncinotis tenuiloba* Stapf

Distribution: Africa from Western Nigeria to Ethiopia in the north and to Eastern South Africa in the south.

Ecology: Rain forests, swamp forests, riverine forests and secondary forests, on sand, clay and rocky outcrops; alt. 0–1800 m.

A selection of the ca 130 specimens examined:

NIGERIA: Gongola State: Mambilla Plateau, Sardauna Prov (fr. Aug.) H. M. Chapman FHI 70838 (K).

CAMEROUN: Bafoussam (fl. Jan.) Jacques-Félix 3017 (BR, K, P, WAG).

CENTRAL AFRICAN REPUBLIC: Yalinga (fr. Oct.) Le Testu 4240 (BM, BR, P); ibid. (fl. Apr.) Le Testu 4681 bis (P).

CONGO(–Brazzaville): near Montou Ya N'Gombé (fl. May) Sita 2118 (P); N'Tonkama Forest, 45 km SW of Brazzaville, on road to Kinkala (fl. Nov.) Sita 1922 (P).

ZAÏRE: Equateur: Ukaturaka (Oct.) Bequaert 40 (BR); near Lukasa (= Likasa) (fl.) Dewèvre 883 (BR, type); Eala (fl., fr. May) M. D. J. Laurent 673 (BR); Coquilhatville (= Mbandaka) (fl. May) Seret 889 (BR); near Mondombe (fr. Nov.) Jespersen 46 (BR); ibid. (fl., fr. Nov.) Jespersen 75 (BR). Haut-Zaïre: Tolele Isl., between Lileko and Basoko (fl. Sept.) Louis 11429 (BM, BR, EA, FI, K, P); Tutuku Isl., near Yangambi (fl. Apr.) Louis 9171 (BM, BR, K, MO, P); Esali Isl., near Yangambi (fl. May) Louis 9207 (BM, BR, EA, FI, K, P); Tofende Isl., near Yangambi (fl. Apr.) Louis 14658 (BR, EA, K, MO, NY); Banalia, Ambala Isl. on the Aruwimi R. (Nov.) Lisowski 47290 (BR); Kangole Isl. on the Lindi R., near Kisangani (Mar.) Lisowski 42130 (BR); Ubundu Isl. on the Zaïre R. (Mar.) Lisowski 48188 (BR); Kurukwata (Aba) (fl., fr. Oct.) Gérard 3666 (BR, WAG(. Kivu: Rutshuru (fl. Mar.) Ghesquière 3806 (BR, P). Bandundu: Mistandungu (= Mistan-

dunga) (Aug.) Chevalier 27864 (P); Kutu (fl.) Lebrun 6649 (BR, K). Kinshasa: Maluku, on road to Mabana (buds, Nov.) Breyne 984 (BR, WAG). Bas-Zaïre: Gimbi, in the Mvuzi Valley (fl. Feb.) Toussaint 841 (BR); M'Vuazi (fl. Dec.) Delhaye 325 (BR).

SUDAN: Gilo, Imatong Mts. (buds, Nov.) Friis & Vollesen 355 (BR); Talanga, Imatong Mts. (fl. Dec.) Friis & Vollesen 721 (BR).

ETHIOPIA: Ilubabor Province: Heti (fl. Dec.) Mooney 8813 (K). Kaffa Province: Bonga (fl., fr. Dec.) Bos 9385 (WAG); 3 km S of Bonga, on path to Ghecchia R. (fl. Jan.) Ash 1471 (K, MO). Arusi Province: near Lake Awasa (fl. Dec.) Ellenbeck 1710 (K, type of *Motandra erlangeri*).

UGANDA: Bugoma Forest (fr. Nov.) Dawe 705 (K); Busoga, Butemba Bunya near Kagoma (fl. Nov.) G. H. S. Wood 16 (BR, EA, K); 8 km from Mpigi, on the Entebbe-Masaka road (fl. Feb.) Eggeling 422 (BM, EA, K); Kasala Forest (fl. Jan.) Dümmer 1416 (BM, EA, K, MO, US, Z); Mbara (fl. Jan.) Dümmer 3297 (BM, K, US, Z).

KENYA: Rift Valley Province: Kaimosi, Kapsabet Distr. (fr. June) G. R. Williams 576 (EA, FI, K, PRE).

TANZANIA: Lake Province: Ukerewe (fr. Nov.) Conratz 460 (HBG). Tanga Province: Mombo For. Res., Korogwe Distr. (fl. June) Semsei 3488 (EA, K, PRE); Mombo, Usambara Mts. (fl., fr. June) Peter 40756 (WAG); Magunga Estate, Korogwe Distr. (fl. May) Faulkner 945 (BR, K, LISC, S); Derema near Amani (fl. Jan.) Braun 3357 (EA, K); ibid. (fr. May) Grote 3746 (EA, K); Sigi-Longuza road (fl. May) Peter 58260 (B, WAG); Kihuhwi (fl. May) Greenway 6693 (EA, K, PRE); Chazi, Morogoro Distr. (fl., fr., fr. Aug.) Greenway 8627 (EA, K, PRE). Southern Highlands Province: Taveta (fl. Jan.) Greenway 4478 (EA, K); Bundali near Isoko, Kyimbila Distr. (fr.) Stolz 2563 (A, BM, BR, C, EA, K, MO, P, PRE, Z). Zanzibar: sin. loc. (fl.) Vaughan 1730 (EA, K).

ZAMBIA: Nsumbu Isl. in Lake Bangweulu, Luwingu Distr. (fl. Oct.) Brenan & Greenway 8103 (K).

MALAWI: Lisau Saddle, Chiradzulu For. Res. (fr. Jan.) J. D. Chapman & Balaka 6095 (BR); Mt. Mulanje, Ruo Gorge (fr. Jan.) Hilliard & Burtt 4631 (E); Cholo Distr. (Oct.) J. D. Chapman 957 (SRGH).

ZIMBABWE: Mt. Horzi, Bikita Distr. (May) Biegel 3115 (K, SRGH, WAG); Chirinda Forest (fl., fr. Oct.) Swynnerton 87 (BM, K, SRGH, Z, type of *O. chirindica*); ibid. (fl., fr. Oct.) Wild 2175 (BR, COI, EA, K, S, SRGH); ibid. (fl., fr. Oct.) Goldsmith 41/64 (BR, K, LISU, M, MO, PRE, SRGH); near Lusitu R. (= Rusitu R.), about 5 km upstream for confluence with Haroni R. (fr. Apr.) Drummond 10187 (SRGH).

MOÇAMBIQUE: Moçambique Province: Murripa Mts. near Malema, km 40 road Entre Rios-Ribáuè (imm. fr. Dec.) Torre & Correia 16521 (LISU). Zambézia Province: Tumbine Mts., Milange Distr. (fr. Jan.) Correia 450 (LISC). Manica e Sofala Province: near Dombe (fl. Aug.) Simão 485 (LISU).

SOUTH AFRICA: Natal: Hlogweni Forest, S of Tugela R., Stanger Distr. (fl. Sept.) Moll 3601 (BR, K, PRE, S); Inanda (fl., fr. Sept.) J. M. Wood 1009 (BM, K, MO, P, lectotype of *O. inandensis*); ibid. (fl. Oct., fr. June) J. M. Wood 6159 (BM, E, K, L, NY, PRE, paratype of *O. inandensis*); Uvongo Beach (Dec.) Strey 8320 (M, PRE); Ellesmeere, near Dumisa, Alexandra Distr. (fl. Oct.) Rudatis 1198 (A, BM, E, HBG, G, K, L, M, S, W, WAG, Z); Table Mountain, Pietermaritzburg (fl., fr. Sept.) Killick 683 (E, K, MO); Shelley Beach, Kloof Forest (fl. Oct.) Strey 7721 (BR, K, S). Cape Province: about km 9 road Mbotyi-Lusikisiki (fl., fr. Aug.) Story 4243 (K, PRE); km 1.5 road Port St. Johns-Umtata (Feb.) Wells 3397 (PRE); Manubie Forest, Kentani Distr. (fl. Oct.) Pegler 1261 (PRE, S).

Cult.: SOUTH AFRICA: Transvaal: Lowveld Bot. Garden (fl. Oct.) Buitendag 1094 (K).

Note: *O. inandensis* is here reduced to a synonym of *O. tenuiloba*. PICHON's revision (1954) separates them by a slight difference in the size of the anthers. Observations by the present author indicate that they are continuously variable in size and this cannot be accepted as a differential character.

7. Oncinotis tomentella Radlk. 1883: 405–406; Schumann 1895a: 179; 1895b: 319 (as *O. hirtella*); Pichon 1950: 143, pl. X, fig. 14; 1954: 20–22; 21, fig. 2; Markgraf 1976: 223–224; 225, pl. 36. **Fig. 7; Map 7**

Type: Madagascar: Nosy Bé, Hildebrandt 3283 (BREM, holotype; isotypes: K, L, M, P, W).

Heterotypic synonyms: *O. nigra* Pichon 1954: 19–20; 21, fig. 2; Markgraf 1976: 224–226; 225, pl. 36. Type: Madagascar: Périnet, Analamazaotra forest, Perrier de la Bâthie 8947 (P, holotype; isotype: K).

Large *liana*. *Branches* dark to medium brown and culcate when dry, often with some large orange to pale brown lenticels; branchlets brownish-green to dark grown and slightly sulcate when dry, puberulous to rusty brown-pubescent. *Leaves*: petiole 5–14 mm long, glabrous, puberulous or rather densely covered with up to 0.2 mm long simple or branched hairs, along the adaxial side near the base of the blade with 2 triangular glands up to 1 mm long, often also 1–5 isolated ones or 1–5 clusters of 2–4 smaller glands; blade obovate, less often elliptic or narrowly so, 1.6–3.5 × as long as wide, 2.9–11.8 × 1.2–4.7 cm, acuminate at the apex, cuneate or rounded at the base, usually undulate or recurved at the margin, papery to coriaceous when dry, glabrous or less often puberulous on the midrib and veins, medium green above, slightly paler beneath, glossy, especially so above; blade in the leaves of the first pair or the first two pairs of a branchlet often suborbicular, rounded, obtuse or emarginate at the apex and smaller; on each side 4–12 secondary veins; tertiary venation conspicuous, reticulate or faintly scalariform; domatia sometimes absent, usually consisting of pits, often with a ciliate margin. *Inflorescence* 3.5–8.5 × 1.5–5.5 cm. Peduncle and branches rusty brown-pubescent, glabrescent. Pedicels 1.5–3(–4) mm long, densely rusty brown-pubescent, glabrescent. Bracts, and – if present – bracteoles, ovate to triangular or narrowly so, 1–1.6 × 0.3–1.2 mm, acute at the apex, outside rusty brown-pubescent. *Sepals* brownish-green, ovate to triangular or – less often – narrowly so, 1.2–3.3 × as long as wide, 1.2–3.2 × 0.8–2.2 mm, outside rusty brown-pubescent. *Corolla* yellow-green, in the mature bud 3–6.2 × as long as the calyx, 7.5–10.4 mm long; tube urceolate, widest below the middle and there 1.5–2 mm in diameter, 1.4–2.7 × as long as the calyx, 2–3.6 mm long, at the base and at the apex 1–1.2 mm in diameter; inside with tufts of hairs at 0.9–1.1 mm from the base; lobes narrowly triangular, 1.1–2.3 × as long as the tube, 4–7.6 × as long as wide, 4–7.2 × 0.7–1.1 mm, outside pubescent; corona 0.1–0.5 mm long, pubescent. *Stamens* inserted at 0.7–0.8 mm from the base of the tube; filaments 0.2–0.3 mm long; anthers 6.5–13 × as long as the filaments, 1.9–2.7 mm long; tails 0.3–0.6 mm long; fertile portion 1.1–1.3 mm long. *Pistil* 2.8–3.4 mm long; carpels 0.9–1.5 × 0.4–0.8 × 0.2–0.5 mm, superior portion 0.6–1 mm long; disk: ring 0.1–0.5 mm high, lobes 0.1–0.7 × 0.3–0.7 mm; style 0.2–0.3 mm long; pistil head: upper portion 0.4–0.5 × 0.2–0.4 mm, lower portion 0.6–1 × 0.3–0.5 mm; appendices 0.3–0.5 mm long. Each placenta with 20–50 ovules. *Fruits*: follicles fusiform, or almost so, sometimes recurved or upcurved, making an angle of 170–230°, 14–18 × as long as wide,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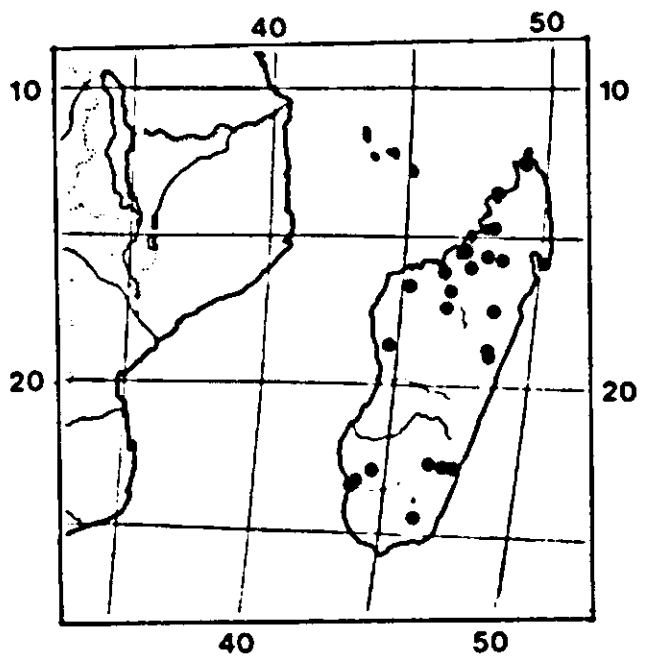

MAP 7. *Oncinotis tomentella* Radlk.

8.1–19.5 × 0.4–2.1 × 0.4–2.1 cm; exocarp up to 1 mm thick, sulcate, pubescent, glabrescent and often with pale brown lenticels at the outer surface. *Seeds* up to 40 in each follicle, coma 23–54 mm long, grain 13.3–26.2 × 2.9–6.5 × 1.9–3.2 mm, minutely rugose; cotyledons 10.4–15.5 × 2.5–6.3 mm; rootlet 2.5–4.5 mm long.

Distribution: Madagascar.
Ecology: Forests, especially on rocky outcrops.

A selection of the ca 50 specimens examined:
MADAGASCAR: Ambre Forest (fl. Jan.) Perrier de la Bâthie 17566 (P); Nosy Bé (fl. Dec.) Hildebrandt 3283 (BREM, K, L, M, P, W, type); along road from Antsohihy to Bealanana, 13–15 km E of Antsahabe (fl., fr. May) Gentry 11764 (K, MO, P, PRE, WAG); ibid., 7–10 km E of Antsahabe (fl., fr. May) Gentry 11550 (K, P, PRE, WAG); Mahajamba Forest (fr. Nov.) Perrier de la Bâthie 11761 (P); near Mandritsara (fr. Nov.) Perrier de la Bâthie 15041 (P); Masoala (buds, Oct.) Perrier de la Bâthie 8905 (P); Ampijoroa (fr. Sept.) Boiteau 1090 (P); Mandraty Forest (fl., fr. Mar.) Perrier de la Bâthie 1002 p.p. (P); Belambo, left bank of Ikopa R., near Maevatanana (fr. Nov.) Perrier de la Bâthie 1002 p.p. (P); Antsihanaka (fl. Nov.) Boiteau 2291 (P); ibid. (fl. Nov.) Boiteau 2207 (P); Antsalova, Berano Forest (buds, Jan.) Serv. For. Madag. (SF) 26523 (P); Analamazaotra Forest (fl. Jan.) Perrier de la Bâthie 8947 (K, P, type of *O. nigra*); ibid. (fr. June) Boiteau 3734 (P); ibid., Périnet (fr. Apr.) Bosser 15916 (P); ibid. (fl. Nov.) Benoist 1514 (P, WAG); Análavelona Forest, Fiherenana R. (fl. Dec.) Humbert 19754 (P, WAG); Analamarina Forest, near Teheza R. and Onilahy R., S of Sakaraha in the Hazoroa Valley (fl. Dec.) Humbert 19667 (P, WAG); ibid. (fl. Mar.) Humbert & Capuron 29705 (P, WAG); ibid. (fr. Mar.) Humbert & Capuron 29706 (P, WAG); between Vondrozo and Ivohibe, near Farafangana (fl. Sept.) Decary 5298 (G, P); ibid., near Savoka (fl. Sept.) Decary 5429 (BM, P, PRE, S); along Fiherenana R., between Beantsy and Anjamala (fl. Jan.) Humbert 19908 (P, WAG); Tuléar, Behompy, on road to Anjamala (fr.) J. & M. Peltier 2506 (P); along Mandrare R., on Marosoui summit (fl. Nov.) Humbert 6586 (G, P).

Note: The variation both in the venation and in the pubescence of the leaves shows an irregular pattern throughout the specimens. Therefore the present author consider *O. nigra* as a synonym of *O. tomentella*.

FIG. 7. *Oncinotis tomentella* Radlk.: 1. flowering branch, ⅔ ×; 2. leaf base with petiole from above, 4 ×; 3. domatia, 4 ×; 4. flower, 4 ×; 5. opened flower showing 2 stamens and the pistil; the left stamen detached from the pistil, 8 ×; 6. stamen, adaxial side, 8 ×; 7. fruit, ⅔ ×; 8. seed, ⅔ ×. (1–6 Decary 5298; 7–8. Perrier de la Bâthie 1002).

NOMINA NUDA

O. oblanceolata Engl. 1910: 309. = *O. tenuiloba* Stapf.

O. paniculosa Mildbr. 1922: 62. Specimen cited: *Mildbraed 4920* (probably destroyed at B).

EXCLUDED SPECIES

O. axillaris Schumann 1896: 226–227. = *Baissea multiflora* A. DC. (*Apocynaceae*).

O. campanulata Schumann 1896: 227. = *Baissea campanulata* (Schumann) De Kruif, comb. nov. (*Apocynaceae*).

O. melanocephala Schumann 1894: 34. = *Baissea myrtifolia* (Benth.) Pichon (*Apocynaceae*).

O. subsessilis Schumann 1900: 307. = *Baissea multiflora* A. DC. (*Apocynaceae*).

O. zygodioides Schumann 1896: 227–228. = *Baissea zygodioides* (Schumann) Stapf (*Apocynaceae*).

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